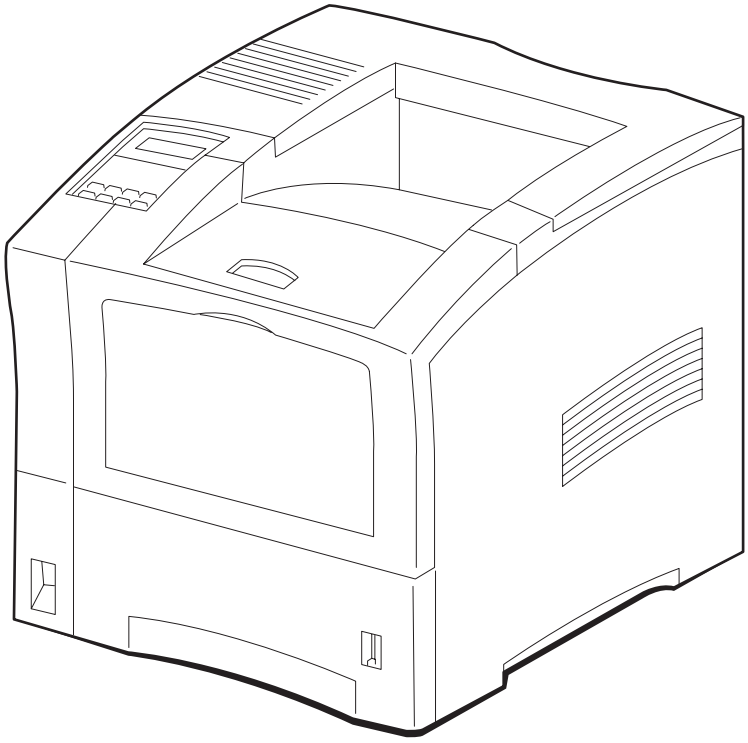
HAKUBA
26PPM Laser Printer

Base Engine Technical Manual



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Version 1.0

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- Re–orient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/television technician for help.

The user may find the following booklet prepared by the Federal
Communications Commission helpful:
“How to Identify and Resolve Radio-TV Interference Problems”. This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402, Stock No. 004-000-00345-4.

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Changes or modifications to this equipment not expressly approved
by Xerox International Partners may void the user's right to
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CANADIAN NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio interference regulations of the Canadian Department of Communications.

AVIS CANADIEN

Cet appareil numerique est conforme aux limites émission de bruits radioélectriques pour les appareils de classe B stipulés das le réglement sur le brouillage radioéletrique du Ministére des Communcations du Canada.

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HINWEIS

Hiermit wird bescheinigt, dass der Asama Laserdrucker, in bereinstimmung mit den Betimmungen der Vfg 104ß 984 funkenstört ist.

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CLASS 1 LASER PRODUCT

This Laser Printer is certified to comply with laser product performance standards set by the U.S. Department of Health and Human Services as a Class 1 laser product. This means that this is a class of laser product that does not emit hazardous laser radiation; this is possible only because the laser beam is totally enclosed during all modes of customer operation.

The laser and output of the laser scanning unit produces a beam that, if looked into, could cause eye damage. Service procedures must be followed exactly a written without change.

When servicing the machine or laser module, follow the procedures specified in the manual and there will be no hazards from the laser.

Use of Controls, adjustments, or performance of procedures other than those specified herein may result in a hazardous radiation exposure.

Unpacking the Base Engine

CAUTION

Be sure to carry the Base Engine by two or more persons taking care to hold it horizontally.

CAUTION

Be sure to take great care for persons not to hurt when carrying it.

Open the package and check the Base Engine for damage in transit.

Remove the Holder BTR from the Base Machine after unpacking procedure of Base Engine.

Removal procedure of the Holder BTR is as follows.

1. Open the *Cover Assy Front* (PL1.1.9).

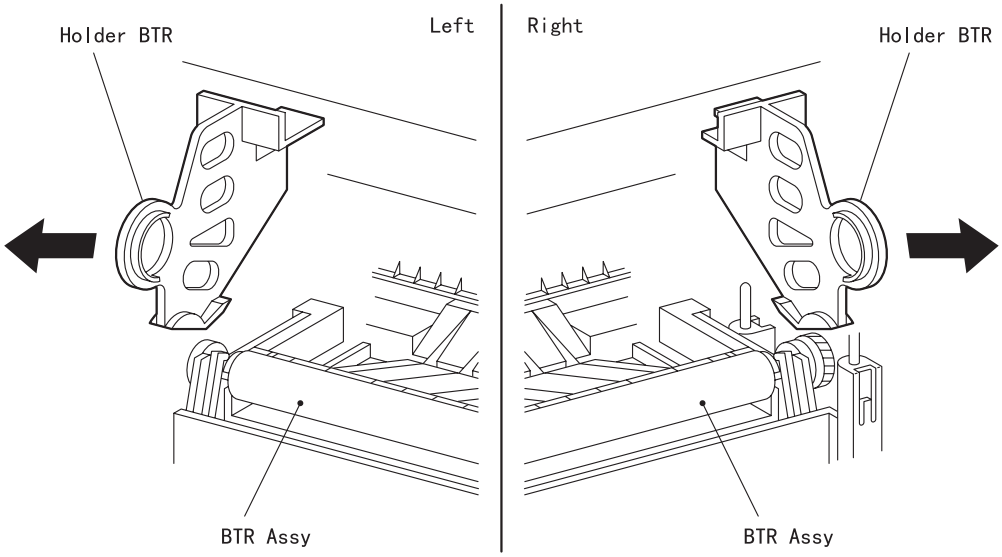
NOTE

Take care not to give a damage to the Roll surface of the Roll Assy BTR when do the following procedure.

NOTE

Holding the Base Machine when do the following procedure.

2. Catch in the handle of the Holder BTR:L.And pull out the Holder BTR:L from the Base Machine to your side with diagonal and upper direction.
3. Catch in the handle of the Holder BTR:R.And pull out the Holder BTR:R from the Base Machine to your side with diagonal and upper direction.



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Introduction

This manual contains technical and service information for the HAKUBA 26ppm (page per minute) Laser Printer. The information is based on and validated using the basic model printer. Expect some minor discrepancies in physical appearance, hardware count, and electrical readings due to engineering modifications and manufacturing changes during the life of the product.

The information in this manual is presented with the assumption that the OEM customer has designed their PWB ESS (Controller) to implement service diagnostics exactly as described in the Video Interface Specifications and in this manual.

This manual serves as both a technical reference manual and as a guideline for OEM clients who wish to prepare their own service manual. Other uses are prohibited.

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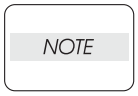
About this Manual

Symbols Used in This Manual

NOTE: A Note indicates an operating or maintenance procedure, practice, or condition that is necessary to accomplish a task efficiently.



CAUTION: A Caution indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.

WARNING: A Warning indicates an operating or maintenance procedure, practice, or condition that, it not strictly observed, could result in injury or loss of life.

Additional documentation for HAKUBA

- **User Manual**
  The manual that describes how to operate and maintain the HAKUBA 26ppm Laser Printer
- **Performance Data**
  The FX internal OEM document that provides detailed HAKUBA 26ppm performance information
- **Interface Specifications**
  The FX internal OEM document that provides detailed HAKUBA 26ppm video interface specification data
- **Spare Parts List**
  The XIP internal document that provides part numbers for the HAKUBA 26ppm printer

Safety information

Follow these safety instructions to prevent accidents while servicing the HAKUBA 26ppm Laser Printer. Always be aware of the potential dangers that are present when you are working with electrical or mechanical equipment.

Power supply and electrical components

Before starting any service procedure, switch off the printer power and unplug the power cord from the wall outlet. If you must service the printer with power applied, be aware of the potential for electrical shock.

WARNING: ***Do not touch any electrified component unless you are instructed to do so by a service procedure***

Mechanical components

Hand crank to inspect sprockets and gears. Do not try to hand crank the printer while the Motor Assy is running.

ROS Assy

WARNING: **This printer uses a laser as part of the printing process. The laser beam is a very powerful, straight, narrow beam of light that produces extreme heat at its focal point. The laser beam in the Asama printer is invisible. Although you cannot see the beam, it can still cause severe damage. Direct eye exposure to the laser beam may cause eye injury or blindness.**

To avoid permanent eye damage, follow these directions:

- Before starting any service procedure, switch off the printer power and unplug the power cord from the wall outlet.
- Do not disassemble the ROS Assy or any laser component displaying a Laser Warning Sticker.
- Use caution when you are working around the ROS Assy or if you are performing laser related repair procedures.
- The HAKUBA 26ppm Laser Printer is equipped with two safety switches; the Switch Assy I/L Front (the switch that breaks the 24V circuit when the Cover Assy Front opens) and the Switch Assy I/L Rear (the switch that breaks the 3.3V circuit for the Motor Assy Exit when the Cover Rear opens). The Switch Assy I/L Front supplies the power to all internal components. The Switch Assy I/L Rear supplies the power to the Motor Assy Exit. It is extremely dangerous to cheat the Switch Assy I/L while the CRU is removed.

Safety Components

Make sure fuses, interlock switches, covers and panels are all functioning properly after you have reinstalled or replaced them.

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1. Service Flowchart

First identify the following phenomena when any problems occur.

- Occurrence of Error/Status Code
- Problem of image quality
- Problem of printer performance

Go to the section corresponding to the problem.

1.1. Identify the Problem

1. Verify that the reported problem does exist.
2. Check for any error codes.
3. Execute three test prints.
4. Take note of any print quality problems in the three test prints.
5. Take note of any mechanical or electrical abnormalities that are present.
6. Take note of any unusual noise or smell coming from the printer.
7. When you have identified the problem, go to the next block that is listed in the Service Flowchart.

1.2. Clean the Printer

1. Switch OFF the printer power.
2. Disconnect the AC power cord from the wall outlet.
3. Disconnect the power cord from the printer.
4. Open the Cover Assy Front.
5. Remove the CRU.

   Cover the CRU with a dark cloth and store it away from strong light.

6. Inspect for and remove any foreign matter such as paper clips, staples, scraps of paper, paper dust, or toner from the interior of the printer.
7. Clean the interior with a lint–free cloth, dampened slightly with cold water.
8. Clean the rubber rollers with a lint-free cloth, dampened slightly with cold water. Use a clean, lint-free cloth to dry the rollers.

CAUTION: Use only water to clean the interior of the printer. Do not use chemical solvents or cleaners.

Do not use any type of oil or lubricant on printer parts.

Solvents, cleaners, and oils may damage printer components.

9. Clean the Laser Scanner window with a soft, dry, lint-free cloth.
10. Use canned air to clean the BTR.

    Do not touch the BTR with your fingers.

    Do not clean the BTR with a brush or a damp cloth.

11. While cleaning, inspect the interior of the printer for damaged wires, loose connections, toner leakage, and worn or damaged part.
12. If the CRU appears excessively dirty or obviously damaged, replace it with a new one.
13. When you have finished cleaning the printer, go to the next block that is listed in the Service Flowchart.

1.3. Final Checkout

1. Reinstall all of the covers that you removed while servicing the printer.
2. Check that the original error code is gone and there are no new error codes displayed.
3. Execute a series of test prints.

   The printer generates the test prints without jamming and without any print image defects.
4. Take note of any mechanical or electrical abnormalities that are present.

   The printer runs through the entire print cycle without any obvious problems.
5. Take note of any unusual noise or smell coming from the printer.

   During the print cycle there are no unusual noises or smells coming from the printer.
6. The call is completed.

   Clean up your work area, and return the printer to the customer.

Section 2 The Fault Isolation Procedure (FIP) Flowchart Contents

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2. The FIP Flowchart

If you used the Service Flowchart, it should have directed you to this section. Now, follow the **FIP Flowchart** to analyze your printer problem.

How to Use the FIP Flowchart

1. If you have an error code displayed on the screen of the Diagnostic Tool; go to the **ERROR CODE** box.
2. If you have a printer operation problem; go to the **PRINTER PERFORMANCE** box.
3. If you have a print image problem; go to the **IMAGE QUALITY** box.
4. Follow the arrow leading from your problem box to the individual FIP (Fault Isolation Procedure) that corresponds to your error code, printer operation problem, or print image problem.
5. Follow the instructions presented in the FIP.

How to Follow a FIP

1. Each numbered step in a FIP instructs you to perform a certain action or procedure.
2. The instruction is followed by a question.
3. If your response to the question is **Yes**, then follow the instructions for a Yes reply.
4. If your response to the question is **No**, then follow the instructions for a No reply.
5. FIPs often ask you to take voltage readings at certain test points within the printer.
   Appendices D and E contain information on signal names and test point locations.
6. FIPs often ask you to replace a printer component.
   Section 9 Removal/Replacement provides you detailed procedures for removing and replacing all major parts of the Asama printer.

General Notes on Using FIPs

1. FIPs assume there is no malfunction in printer controller. If you are unable to fix a problem using the FIPS, we recommend that you replace the printer controller.
2. FIPs use new and "known good" components as troubleshooting tools. We recommend you carry a spare CRU, PWBA HKB MCU, and PWB ESS.
3. Unless indicated otherwise, the instruction "switch ON main power" means for you to switch ON printer power, and let the printer proceed through power-on diagnostics and warm-up until it is on-line and ready to print.
4. Conventions used to represent connectors:

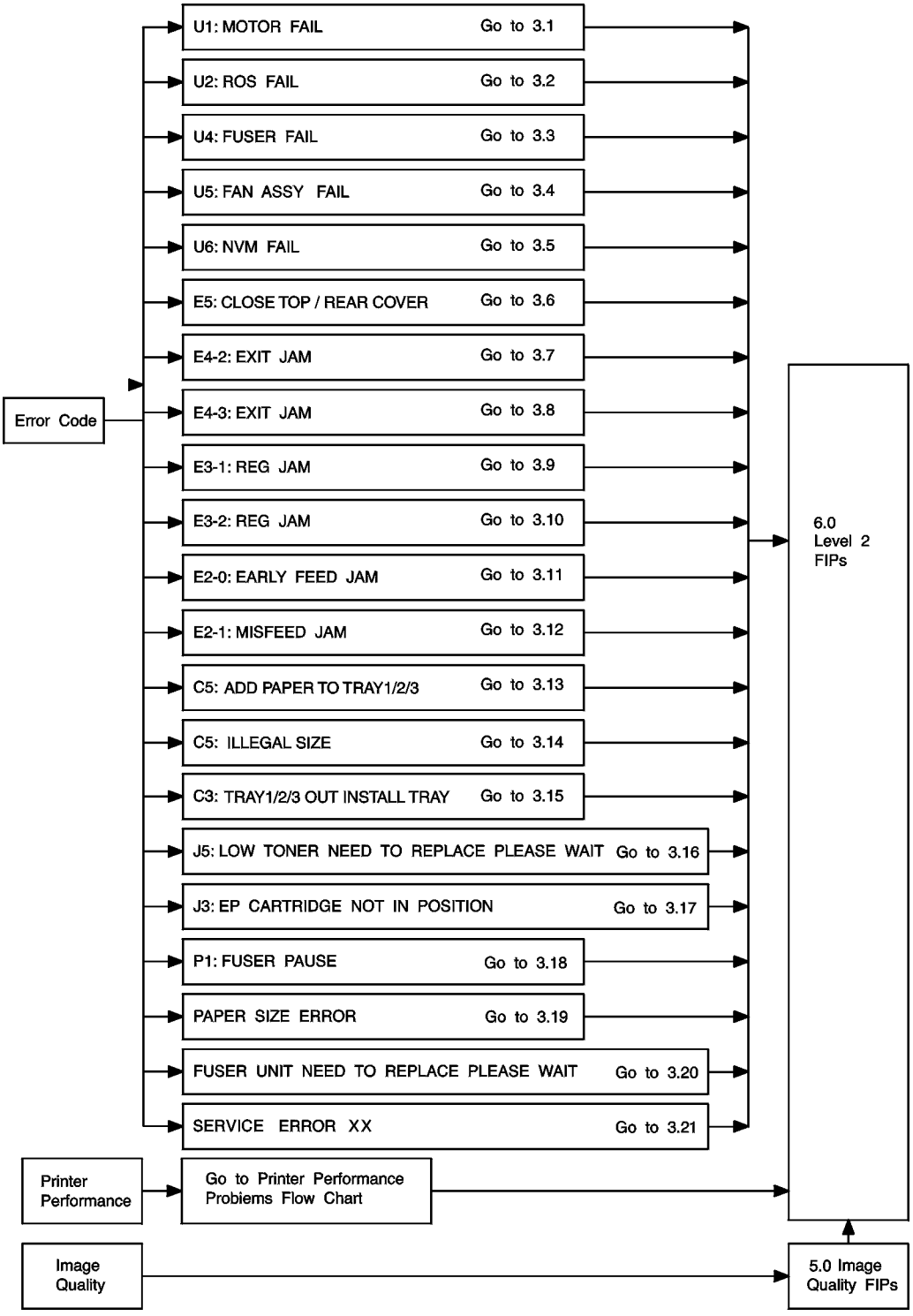
   P/J XX means a Plug and its corresponding Jack, are connected.

   PXX means a Plug is disconnected. (Unless this plug is soldered to a PWB).

   JXX means a Jack is disconnected. (Unless this jack is soldered to a PWB).

5. When you are instructed to take a voltage reading between "P/J A–B and P/J X–Y", place the red probe (+) of your meter on pin B of P/J A, and place the black probe (–) of your meter on pin Y of P/J X.
6. When you are instructed to take voltage readings between "P/J X and P/J Y" (without specified pin numbers), check all voltage carrying pins. Refer to the Wiring/Connection Diagrams for signals and pin numbers.
7. When you are instructed to take a voltage reading, the black probe (–) is generally connected to a pin that is either RTN (Return) or SG (Signal Ground). You can substitute any RTN pin or test point in the printer, and you can use FG (Frame Ground) in place of any SG pin or test point.
8. Unless a FIP instructs you otherwise; before measuring voltages make sure the printer is switched ON, the CRU and Cassette Assy are installed, and the Cover Assy Front and Cover Assy Rear are closed (Interlock Switch is actuated).
9. All voltage values given in the FIPs are approximate values. Actual measured voltages may vary somewhat from the given values.
10. FIPs may instruct you to remove or replace a component. Refer to Section 10 Removal and Replacement, for information on how to remove and reinstall a component.
11. When a FIP instructs you to replace a component, and that component is part of a larger assembly, you should replace the entire assembly.

FIP Flowchart


Error Code
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U4: FUSER FAIL Go to 3.3
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3. Level 1 FIPs: Error Codes

The FIP Flowchart should have directed you to this section.

Before entering the Error Code FIPs, make sure:

1. Is the printer plugged into a recommended AC wall outlet?
2. Is the AC power provided at the wall outlet within recommended specifications?
3. Is the AC power cord connected to the printer.
4. Is the AC power cord in good condition; not frayed or broken?
5. Is the printer properly grounded through the AC wall outlet?
6. Is the printer located in an area where the temperature and humidity are moderate and stable?
7. Is the printer located in an area that is free of dust?
8. Is the printer located in an area away from water outlets, steamers, electric heaters, volatile gases, or open flames?
9. Is the printer shielded from the direct rays of the sun?
10. Does the printer have recommended space around all sides for proper ventilation?
11. Is the printer sitting on a level and stable surface?
12. Is recommended paper stock being used in the printer?
13. Does the customer use the printer as instructed in the HAKUBA User Manual?
14. Are consumables, such as the CRU, replaced at recommended intervals?

HAKUBA Error Codes

Code -- Message	Cause	Results --- How to Clear the Code (If you cannot clear the code, go to the appropriate error code FIP, or to the option service manual)
U1 -- U1:MOTOR FAIL	There is a problem with the Motor Assy Main. 1. The rotation speed of the Motor Assy Main is less than specified rpm and the state of a printer does not turn READY, after the Motor Assy Main started rotating 1.3 seconds passed. 2. The fail is detected during the Fan on operation.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop at end of print cycle. --- Switch OFF Main Power. Switch ON Main Power.
U2 -- U2:ROS FAIL	There is a problem with the ROS Assy. 1. /BD signal intervals are longer than specified value after ROS Motor start rotating. 2. After the interval of transmitting /BD signal reaches the specified value, the interval is longer than the specified value. 3. When the laser power does not reach the specified value.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop at end of print cycle. --- Switch OFF Main Power. Switch ON Main Power.
U4 -- U4:FUSER FAIL	There is a problem with the Fuser Assy. 1. Fuser Assy temperature is does not reach the temperature even after 110 seconds passed. 2. Fuser Assy temperature gets lower than [Set Temp. 125 °C], in printing. 3. Fuser Assy temperature gets higher than [Set Temp. 220 °C]. 4. The thermistor disconnection is detected. 5. The heat lamp continuously turns on for 10 seconds during the Standby Mode.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop at end of print cycle. --- Switch OFF Main Power. Switch ON Main Power.
U5 -- U5:Fan Assy FAIL	There is a problem with the Fan Assy. 1. The Fan Motor stops rotating after the printer power is turned on.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop at end of print cycle. --- Switch OFF Main Power. Switch ON Main Power.
U6 -- U6:NVM FAIL	There is a problem with NVRAM. 1. An NVRAM read error occurred immediately when you switched ON main power. 2. A write error occurred when you tried to write to NVRAM. 3. The overflow of the Task Table.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop at end of print cycle. --- Switch OFF Main Power. Switch ON Main Power.

HAKUBA Error Codes continued

Code -- Message	Cause	Results --- How to Clear the Code (If you cannot clear the code, go to the appropriate error code FIP, or to the option service manual)
E5 -- CLOSE TOP / REAR COVER	The Cover Assy Front and/or the Cover Rear are/ is open.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Close the open cover.
E5 -- FACE UP TRY OPEN	The Cover Assy Rear Face Up is open.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Close the open cover.
E4 -- E4-2:EXIT JAM	There is a paper jam for the standard cut paper at the Sensor Exit. 1. The Sensor Photo:Exit does not turn OFF within the specified time after the Sensor Photo: Exit turning ON. 2. The Sensor Photo:Exit turns ON immediately after the power is turned on or when the Cover Assy Front is close.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Open the Cover Assy Front or Rear. Remove the jammed paper. Close the Cover Assy Front or Rear.
E4 -- E4-3:EXIT JAM	There is a paper jam at the Sensor Exit. The paper of Universal or Custom does not actuate the Sensor Photo:Exit within the specified time from the Sensor Photo Regi OFF timing.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Open the Cover Assy Front or Rear. Remove the jammed paper. Close the Cover Assy Front or Rear.
E3 -- E3-1:REG JAM	There is a paper jam between the Sensor Photo:Regi and the Sensor Exit in the Fuser Assy. The paper does not actuate the Sensor Exit of the Fuser Assy within the specified time after the Sensor Photo:Regi activated.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Open the Cover Assy Front. Remove the jammed paper. Close the Cover Assy Front.
E3 -- E3-2:REG JAM	There is a paper jam at the Regi position. The Sensor Photo:Regi turns ON immediately after the power is turned ON or when the Cover Assy Front is close.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Open the Cover Assy Front. Remove the jammed paper. Close the Cover Assy Front.

HAKUBA Error Codes continued

Code -- Message	Cause	Results --- How to Clear the Code (If you cannot clear the code, go to the appropriate error code FIP, or to the option service manual)
E2 -- E2-0:EARLY-FEED JAM	There is a paper jam at the Sensor Photo:Regi. The paper actuates the Sensor Photo:Regi too early.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Open the Cover Assy Front. Remove the jammed paper. Close the Cover Assy Front.
E2 -- E2-1:MIS-FEED JAM	There is a paper jam at the Sensor Photo:Regi. The paper does not reach the Sensor Photo:Regi within the specified time.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Open the Cover Assy Front. Remove the jammed paper. Close the Cover Assy Front.
C5 -- C5:ADD PAPER TO TRAY1/2/3	Tray 1/2/3 is out of paper. The Sensor Photo:No Pap1/2/3 on the PWBA Feeder (PL3.1.36) is actuated.	The printer completes only the current print cycle. --- ADD the paper to the Tray 1/2/3.
C5 -- C5:ILLEGAL SIZE	The paper fed from the Tray 1/2/3 is different from the NVM set size.	The printer completes only the current print cycle. --- Replace the stacked paper and reload the correct size paper.
C3 -- C3:TRAY1 OUT INSTALL TRAY	Tray 1 is not installed or installed not in the position.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Reinstall Tray 1 completely.

HAKUBA Error Codes continued

Code -- Message	Cause	Results --- How to Clear the Code (If you cannot clear the code, go to the appropriate error code FIP, or to the option service manual)
J5 -- J5:LOW TONER NEED TO REPLACE PLEASE WAIT	The CRU is nearing end of life and needs to be replaced soon.	Displays warning message. --- Replace the CRU.
J5 -- J5:LOW TONER NEED TO REPLACE READY TO PRINT	The CRU is nearing end of life and needs to be replaced soon.	Displays warning message. --- Replace the CRU.
J3 -- EP CARTRIDGE NOT IN POSI-TION	The CRU is not installed or installed not in the position.	Motor Assy Main, Laser Scanner, and Fuser Assy controls stop immediately. --- Reinstall the CRU, or install a new CRU.
P1 -- FUSER PAUSE	The printer received a SET PAUSE command.	The ROS Motor and the Fuser Assy controls stop after printing is completed. --- Turn the Main Power OFF and ON.
-- PAPER SIZE ERROR	The size of the paper loaded in the cassette is different than paper size that is stored in NVRAM. In Duplex mode: The size of the paper loaded in the cassette is not supported in Duplex Mode.	The printer completes the current print cycle. --- Rewrite the NVRAM using ADJUSTMENT MODE MENU.

HAKUBA Error Codes continued

Code -- Message	Cause	Results --- How to Clear the Code (If you cannot clear the code, go to the appropriate error code FIP, or to the option service manual)
-- FUSER UNIT NEED TO REPLACE PLEASE WAIT	The Fuser Assy is nearing end of life and better to be replaced soon.	Displays warning message. --- Replace the Fuser Assy.
-- FUSER UNIT NEED TO REPLACE READY TO PRINT	The Fuser Assy is nearing end of life and better to be replaced soon.	Displays warning message. --- Replace the Fuser Assy.

3.1 U1:MOTOR FAIL

There is a problem with the Motor Assy Main.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Motor Assy Main* (PL8.1.14) • *PWBA HKB26 MCU* (PL10.1.13) • *Gear Assy Drive* (PL8.1.13) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	***MOTOR ASSY MAIN* ANALYSIS** Use MAIN MOTOR TEST to check the *Motor Assy Main* (PL8.1.14). **Does the *Motor Assy Main* run?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Go to step 3.
3	***MOTOR ASSY MAIN* (PL8.1.14) ANALYSIS** 1. Remove the *Motor Assy Main* from the *Gear Assy Drive* (PL8.1.13). Do not unplug the *Motor Assy Main* from the *PWBA HKB26 MCU* (PL10.1.13). 2. Use MAIN MOTOR TEST to check the *Motor Assy Main*. **Does the *Motor Assy Main* run?**	Replace the *Gear Assy Drive* (RRP8.1.3).	Go to step 4.
4	***MOTOR ASSY MAIN* (PL8.1.14) ANALYSIS** Check the voltage between P/J291-9 <=> P/J291-6, P/J291-8 <=> P/J291-5 and P/J291-7 <=> P/J291-4. **Is there +24VDC between P/J291-9 <=> P/J291-6, P/J291-8 <=> P/J291-5 and P/J291-7 <=> P/J291-4 on the *Motor Assy Main*?**	Replace the *Motor Assy Main* (RRP8.1.7).	Go to step 5.
5	***PWBA HKB26 MCU* (PL10.1.13) ANALYSIS** Check the voltage between P/J29-1 <=> P/J29-4, P/J29-2 <=> P/J29-5 and P/J29-3 <=> P/J29-6. **Is there +24VDC between P/J29-1 <=> P/J29-4, P/J29-2 <=> P/J29-5 and P/J29-3 <=> P/J29-6 on the *PWBA HKB26 MCU*?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Go to step 6.
6	***PWBA HKB PS* (PL10.1.17) ANALYSIS** Check the voltage between P/J281-1 <=> P/J281-4, P/J281-2 <=> P/J281-5 and P/J281-3 <=> P/J281-6 on the *PWBA LVPS* **Is there +24VDC between the each P/J281-1 <=> P/J281-4, P/J281-2 <=> P/J281-5 and P/J281-3 <=> P/J281-6 on the *PWBA HKB26 MCU*?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *PWBA HKB PS* (RRP10.1.7).

3.2 U2:ROS FAIL

There is a problem with the ROS Assy.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *ROS Assy* (PL8.1.9) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *CRU* (PL8.1.1) • *Harness Assy ROS (J21-J211, J212, J213)* (PL8.1.7) • *Harness Assy VDO (J22-J233)* (PL8.1.8) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	**NVRAM ANALYSIS** Check the parameter using ADJUSTMENT MODE MENU. **Is the parameters set correctly?**	Go to step 3.	Set correct paramete.r
3	**ROS MOTOR ANALYSIS** 1. Check the ROS Motor using ROS MOTOR TEST. 2. If you cannot hear the ROS Motor running, unplug P/J29 (*Motor Assy Main*). **Can you hear the ROS Motor running before the U2 code appears?**	Go to step 4.	Go to 6.3 ROS Assy Failure.
4	**LD DIODE ANALYSIS** 1. Disconnect P/J22 and P/J21 on the *PWBA HKB26 MCU* (PL8.1.13). 2. Close the *Cover Assy Front* (PL1.1.9). 3. Switch ON Main Power. 4. Check the voltage between P21-5 and P21-6. **Is there +5 VDC between P21-5 and P21-6?**	Go to 6.3 ROS Assy Failure.	Go to 6.1 PWBA HKB PS Failure (+3.3 VDC).

3.3 U4:FUSER FAIL

There is a problem with the Fuser Assy.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Fuser Assy* (PL6.1.7) • *Harness Assy Fuser-M* (J271, J11, J27, J262) (PL6.1.12) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *Switch Assy I/L Front* (PL10.1.12) • *Switch Assy I/L Rear* (PL10.1.7) • *Sensor Photo Exit in the Fuser Assy* (PL6.1.7) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	***SWITCH ASSY I/L FRONT* (PL10.1.12) ANALYSIS** Check the *Switch Assy I/L Front* function using SENSOR/ SWITCH CHECH. **Does the *Switch Assy I/L Front* function correctly and increment the Sensor Check number each time you actuate it?**	Go to step 3.	Replace the *Switch Assy I/ L Front* (RRP10.1.12)
3	***SWITCH ASSY I/L REAR* (PL10.1.7) ANALYSIS** Check the *Switch Assy I/L Rear* function using SENSOR/ SWITCH CHECH. **Does the *Switch Assy I/L Rear* function correctly and increment the Sensor Check number each time you actuate it?**	Go to step 4.	Replace the *Switch Assy I/ L Rear* (RRP10.1.5).
4	***HARNESS ASSY FUSER-M* (J271, J11, J27, J262) (PL6.1.12) ANALYSIS** **Is there continuity between J271 and J11?**	Go to step 5.	Replace the *Harness Assy Fuser-M* (J271, J11, J27, J262) (RRP6.1.4).
5	**HEATER ASSY ANALYSIS** **Does U4 appear after POWER–ON?** **(Answer YES if there is a momentary Fuser Assy Warm-Up Sequence)**	Go to 6.5 Temperature Sensor Failure.	Go to step 6.
6	**HEAT ROD ANALYSIS** Let the Heat Rod cool down. **Does the Heat Rod glow when power is switched ON?**	Go to step 6.	Go to 6.4 Heat Rod Failure.

3.3 U4:FUSER FAIL continued

Step	Actions and Questions	Yes	No
7	**Does the Heat Rod switch ON and OFF after Power–On Sequence?**	Go to step 8.	Go to step 9.
8	**HEAT ROD ANALYSIS** **Is there proper VAC between P/J11-1 and P/J11-2?**	Go to 6.5 Temperature Sensor Failure.	Replace the *PWBA HKB PS* (RRP10.1.7).
9	***PWBA HKB PS* (PL10.1.17) ANALYSIS** Perform this check within 65 seconds after switching power ON. After specified seconds, *PWBA HKB PS* shuts down due to a no–load condition. **Is there +3.3VDC between P/J281-10 and P/J28-8 on the *PWBA HKB PS*?**	Go to step 10.	Go to 6.1 LVPS Failure (+3.3VDC).
10	**HEAT ROD ACTUATOR SIGNAL ANALYSIS** Disconnect P/J28 on the *PWBA HKB26 MCU* (PL10.1.13). **Is there 0VDC between P/J 28-12 and P/J 28-8 on the *PWBA HKB26 MCU* during Power–ON sequence, and does the voltage rise to +3.3VDC when the sequence finishes?**	Go to 6.1 *PWBA HKB PS* Failure (+3.3 VDC).	Replace the *PWBA HKB26 MCU* (RRP10.1.7).

3.4 U5:FAN ASSY FAIL

There is a problem with the Fan Assy.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Fan Assy* (PL9.1.7) • *PWBA HKB26 MCU* (PL10.1.13) • *PWB ESS* (PL10.1.2) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	***FAN ASSY* (PL9.1.7) ANALYSIS** **Can you hear or see the *Fan Assy* spinning when you power-on the printer?**	Go to step 3.	Go to 6.16 Fan Assy Failure.
3	***FAN ASSY* SIGNAL ANALYSIS** Check the voltage between P/J28-13 and P/J28-8 on the *PWBA HKB26 MCU* (PL10.1.13) while the U5 code is displayed. **Is there +3.3VDC between P/J28-13 and P/J28-8?**	Replace the *Fan Assy* (RRP9.1.2).	Replace the *PWBA HKB26 MCU* (RRP10.1.7).

3.5 U6:NVM FAIL

There is a problem with NVRAM.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following component. • *PWBA HKB26 MCU* (PL10.1.13) **Is it compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem component.
2	**Does U6 appear after you switch ON Main Power?**	Go to step 5.	Problem corrected.
3	Switch Main Power OFF and ON several times. **Does U6 still appear when you switch ON Main Power again?**	Go to step 4.	Problem solved.
4	***PWBA HKB26 MCU* (PL10.1.13) ANALYSIS** Enter DIAGNOSTIC MODE MENU. **Can you enter DIAGNOSTIC MODE MENU?**	Go to step 5.	Replace the *PWBA HKB26 MCU* (RRP10.1.7). (If U6 continues, go to 6.20 Electrical Noise).
5	**NVRAM ANALYSIS** Enter ADJUSTMENT MODE MENU and check the parameters for each value of NVRAM Code. Are all parameters set correctly?	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Go to step 6.
6	***PWBA HKB26 MCU* (PL10.1.13) ANALYSIS** 1. Enter correct parameters. 2. Switch OFF Main Power. 3. Switch ON Main Power. **Does U6 still appear?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Problem solved. Return to Service Flowchart.

3.6 E5:CLOSE TOP / REAR COVER

An Interlock Switch is not actuated.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB26 MCU* (PLPL10.1.13) • *PWBA LVPS* (PL10.1.17) • *Switch Assy I/L Rear* (PL10.1.7) • *Cover Rear* (PL1.2.5) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	***SWITCH ASSY I/L REAR* (PL10.1.7) ANALYSIS** 1. Check the *Switch Assy I/L Rear* using SENSOR/SWITCH CHECK. 2. Open and close the *Cover Rear* (PL1.2.5). **Does the *Switch Assy I/L Rear* function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Go to step 3.	Replace the *Switch Assy I/L Rear* (RRP10.1.5).
3	***SWITCH ASSY I/L REAR* (PL10.1.7) ANALYSIS** Check the voltage between P/J30-2 and P/J30-1. **Is there +24VDC between P/J30-2 and P/J30-1 with the *Cover Rear* (PL1.2.5) closed?**	Replace the *Cover Rear* (PL1.2.5).	Replace the *PWBA HKB26 MCU* (RRP10.1.7).

3.7 E4-2:EXIT JAM

There is a paper jam in the exit area of the paper path.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB26 MCU* (PL10.1.13) • *Cassette Assy* (PL2.1.1) • *Switch Size* on the *PWBA Feeder* (PL3.1.36) • *Fuser Assy* (PL6.1.7) • *PWBA LVPS* (PL10.1.17) • *Motor Assy Exit* (PL7.1.21) • *Actuator Full Stack* (PL7.1.2) • *Sensor Photo:Exit* (PL7.1.17) • *Feeder Assy* (PL3.1.19) • *Option Feeder Assy* (PL11.1.1) • *Sensor Photo: Face Control Paper* (PL3.1.13) • *Motor Assy* (PL2.2.22) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	**Does the error code appear immediately after you switch ON Main Power?**	Go to step 3.	Go to step 4.
3	**Is there paper jammed at the Sensor Exit in the *Fuser Assy* (PL6.1.7)?**	Remove the paper.	Go to step 7.
4	**DECURL ROLL of the *FUSER ASSY* (PL6.1.7) ANALYSIS** Check the rotation of Decurl Roll using MAIN MOTOR TEST. Inspect the Decurl Roll operation. **Does the Decurl Roll rotate smoothly?**	Go to step 5.	Replace the *Fuser Assy* (RRP6.1.3).
5	**DECURL ROLL of the *FUSER ASSY* (PL6.1.7) ANALYSIS** Open the *Cover Rear* (PL1.2.5) and cheat the interlock switch. Generate a test print to check the Decurl Roll. **Does the paper pass through the Decurl Roll without problems?**	Go to step 6.	Replace the *Fuser Assy* (RRP6.1.3).

3.7 E4-2:EXIT JAM continued

Step	Actions and Questions	Yes	No
6	**SENSOR EXIT of the *FUSER ASSY* (PL6.1.7) ANALYSIS** 1. Check the Sensor Exit of the *Fuser Assy* using SENSOR/ SWITCH CHECK. 2. Manually feed a sheet of paper into the *Fuser Assy*, then remove the sheet of paper. **Does the Exit Actuator move freely and without binding and does the Sensor Exit function correctly and increment the Sensor Check number on the screen each time you actuate the Sensor?**	Go to step 7.	Replace the *Fuser Assy* (RRP6.1.3).
7	***ACTUATOR CST* (PL21.1.19) ANALYSIS** Remove the *Cassette Assy* (PL2.1.1). Inspect the combination of the *Actuator CST*. **Does the combination of the *Actuator CST* show the correct combination for the paper size present in the cassette?**	Go to 6.12 Paper Size Sensor Failure.	Replace the *Cassette Assy*.
8	***ROLL ASSY MID 1, MID 2 and MID3* (PL7.1.7 and PL7.1.11) ANALYSIS** Check the operation of the *Roll Assies MID*. **Does the *Roll Assies MID* function normally?**	Go to step 10.	Go to step 9.
9	***MOTOR ASSY EXIT* (PL7.1.21) ANALYSIS** Check the voltage between P/J32-1 and frame ground. **Is there +24VDC between P/J32-1 and frame ground?**	Replace the *Motor Assy Exit* (RRP7.1.7).	Replace the *PWBA HKB26 MCU* (RRP10.1.7).

3.7 E4-2:Exit JAM continued

Step	Actions and Questions	Yes	No
10	***ACTUATOR FULL STACK* (PL7.1.2) ANALYSIS** Fill the Exit Tray with paper. **Does the paper lift the *Actuator Full Stack*, and does the *Actuator* expose the photo-sensing point of the *Sensor Photo:Exit* (PL7.1.16)?**	Go to step 11.	Replace the *Actuator Full Stack* (RRP7.1.2) or replace the *Sensor Photo:Exit* (RRP7.1.5).
11	***SWITCH ASSY I/L REAR* (PL10.1.7) ANALYSIS** Use SENSOR/ SWITCH CHECK to check the function of the *Switch Assy I/L Rear*. Open and close the *Cover Rear* (PL1.2.5). **Does the *Switch Assy I/L Rear* function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *Cover Rear* (PL1.2.5).

3.8 E4-3:Exit JAM

There is a paper jam between the sensor Photo Regi and the Sensor Photo Exit.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB26 MCU* (PL10.1.13) • *P/H Assy* (PL5.1.4) • *Switch Size* on the *PWBA Feeder* (PL3.1.36) • *Fuser Assy* (PL6.1.7) • *PWBA LVPS* (PL10.1.17) • *Motor Assy Exit* (PL7.1.21) • *Actuator Full Stack* (PL7.1.2) • *Sensor Photo:Exit* (PL7.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	**Does the error code appear immediately after you switch ON Main Power?**	Go to step 3.	Go to step 4.
3	**Is there paper jammed at the *Sensor Exit* in the *Fuser Assy* (PL6.1.7)?**	Remove the paper.	Go to step 7.
4	**DECURL ROLL of the *FUSER ASSY* (PL6.1.7) ANALYSIS** Check the rotation of Decurl Roll using MAIN MOTOR TEST. Remove the *CRU* (PL8.1.1) and inspect the Decurl Roll operation. **Does the Decurl Roll rotate smoothly?**	Go to step 5.	Replace the *Fuser Assy* (RRP6.1.3).
5	**DECURL ROLL of the *FUSER ASSY* (PL6.1.7) ANALYSIS** Open the *Cover Rear* (PL1.2.5) and cheat the interlock switch. Generate a test print to check the Decurl Roll. **Does the paper pass through the Decurl Roll without problems?**	Go to step 6.	Replace the *Fuser Assy* (RRP6.1.3).

3.8 E4-3:Exit JAM continued

Step	Actions and Questions	Yes	No
6	**SENSOR EXIT in the *FUSER ASSY* (PL6.1.7) ANALYSIS** 1. Check the Sensor Exit in the *Fuser Assy* using SENSOR/ SWITCH CHECH. 2. Manually feed a sheet of paper into the *Fuser Assy*, then remove the sheet of paper. **Does the Exit Actuator move freely and without binding and does the Sensor Exit function correctly and increment the Sensor Check number on the screen each time you actuate the Sensor?**	Go to step 7.	Replace the *Fuser Assy* (RRP6.1.3).
7	***ROLL ASSY MID 1, MID 2 and MID3* (PL7.1.7 and PL7.1.11) ANALYSIS** Check the operation of the *Roll Assis MID.* **Does the *Roll Assis MID* function normally?**	Go to step 9.	Go to step 8.
8	***MOTOR ASSY EXIT* (PL7.1.21) ANALYSIS** Check the voltage between P/J32-1 and frame ground. **Is there +24VDC between P/J32-1 and frame ground?**	Replace the *Motor Assy Exit* (RRP7.1.7).	Replace the *PWBA HKB26 MCU* (RRP10.1.7).
9	***ACTUATOR FULL STACK* (PL7.1.2) ANALYSIS** Fill the Exit Tray with paper. **Does the paper lift the *Actuator Full Stack*, and does the *Actuator* expose the photo-sensing point of the *Sensor Photo:Exit* (PL7.1.16)?**	Go to step 10.	Replace the *Actuator Full Stack* (RRP7.1.2) or replace the *Sensor Photo:Exit* (RRP7.1.5).
10	***SWITCH ASSY I/L REAR* (PL10.1.7) ANALYSIS** 1. Use SENSOR/ SWITCH CHECK to check the function of the *Switch Assy I/L Rear.* 2. Open and close the *Cover Rear* (PL1.2.5). **Does the *Switch Assy I/L Rear* function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *Cover Rear* (PL1.2.5).

3.9 E3-1:REG JAM

There is a paper jam between the Sensor Photo Regi and the Sensor Exit of the Fuser Assy.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Clutch Regi* (PL 5.1.19) • *Sensor Photo:Regi* (PL5.1.12) • *Actuator Regi* (PL5.1.10) • *Roll Regi Metal* (PL5.1.5) • *Roll Regi Rubber* (PL5.1.7) • *BTR Assy* (PL6.1.2) • *CRU* (PL8.1.1) • *Harness Assy Regi (J43-J431, NJ432)* (PL5.1.28) • *Harness Assy Conn (J23-J231)* (PL10.1.10) • *PWBA Conn* (PL10.1.11) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *Gear Assy Drive* (PL8.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	**Is the paper that is loaded in the paper tray wrinkled or damaged?**	Replace with fresh, dry paper.	Go to step 3.
3	**Is there a sheet of paper at the Actuator Regi when the E3 code appears?**	Remove the jammed paper.	Go to step 4.
4	**PAPER SIZE ANALYSIS** 1. Check the size of paper currently loaded. 2. A paper jam can occur if the paper used is larger or smaller than the maximum or minimum size specified for this printer. **Does the paper size meet specifications?**	Go to step 5.	Load paper that meets specifications.
5	***GEAR ASSY DRIVE* (PL8.1.13) ANALYSIS** 1. Use MAIN MOTOR TEST to check the *Gear Assy Drive* function. 2. Open the *Cover Assy Front* (PL1.1.9). 3. Remove the *CRU* (PL8.1.1). 4. Actuate the *Switch Assy I/L Front* (PL10.1.12). **Do the transmission gears rotate correctly against those of the *Roll Assy Turn* (PL3.1.1), the *Feeder Assy* (PL3.1.19), *Clutch Regi* (PL5.1.19)?**	Go to step 7.	Go to step 6.

3.9 E3-1:REG JAM continued

Step	Actions and Questions	Yes	No
6	***CLUTCH REGI* (PL5.1.19) ANALYSIS** Check the voltage between P/J43-1 and P/J43-2. **Is there +24VDC between P/J43-1 and P/J43-2?**	Go to step 7.	Go to 6.2 *PWBA HKB PS* Failure (+24VDC).
7	***ROLL REGI METAL* (PL 5.1.5) *and ROLL REGI RUBBER* (PL5.1.7) ANALYSIS** 1. Open the *Cover Assy Front* (PL1.1.9). 2. Remove the *CRU* (PL8.1.1). 3. Actuate the *Switch Assy I/L Front* (PL10.1.12). 4. Check the rotation of the *Roll Regi Metal* and *Roll Regi Rubber* using MAIN MOTOR TEST. **Does the *Roll Regi Metal* and *Roll Regi Rubber* rotate properly?**	Go to step 8.	Replace the *P/H Assy* (RRP5.1.1).
8	***SENSOR PHOTO: REGI* (PL5.1.12) ANALYSIS** 1. Use SENSOR/ SWITCH CHECK to check the *Sensor Photo:Regi*. 2. Use a sheet of paper to actuate the sensor. **Does the *Sensor Photo: Regi* function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Go to step 11.	Go to step 9.
9	***HARNESS ASSY REGI (J43-J431, J432)* (PL5.1.28) ANALYSIS** 1. Disconnect the *Harness Assy Regi (J43-J431, J432)* from the *PWBA Conn (PL10.1.11)*. 2. Check the continuity between J43-3 <=> J432-3, J43-4 <=> J432-2 and J43-5 <=> J432-1. **Is there the continuity between J43-3 <=> J423-3, J43-4 <=> J432-2 and J43-5 <=> J432-1?**	Go to step 10.	Replace the *Harness Assy Regi (J43-J431, J432).*
10	***PWBA CONN* (PL10.1.11) ANALYSIS** 1. Disconnect the *Harness Assy Conn (J23-J231)* (PL10.1.10) from the *PWBA HKB26 MCU* (PL10.1.13). 2. Check the continuity between P231-7 <=> P41-3, P231-6 <=> P41-5 and P231-10 <=> P43-4. **Is there the continuity between J231-7 <=> J41-3, J231-6 <=> J41-5 and J231-10 <=> J43-4?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *PWBA Conn* (RRP10.1.5).

3.9 E3-1:REG JAM continued

Step	Actions and Questions	Yes	No
11	**DRUM SHUTTER of the *CRU* (PL8.1.1) ANALYSIS** **Does the Drum Shutter open when you install the *CRU*?**	Go to step 12.	Replace the *CRU* (PL8.1.1).
12	***BTR ASSY* (PL6.1.2) ANALYSIS** 1. Remove the *CRU*, so you can inspect the *BTR Assy*. 2. Check the rotation of the *BTR Assy*. **Does the *BTR Assy* rotate smoothly?**	Go to step 13.	Replace the *BTR Assy* (RRP6.1.1).
13	***BTR CHUTE ASSY* (PL6.1.1) ANALYSIS** Inspect the *BTR Chute Assy*. **Is the *BTR Chute Assy* clean and free of contamination?**	Clean or replace the *BTR Assy* (RRP6.1.1) or *Chute Assy Trans* (RRP6.1.2).	Go to step 14.
14	**HEAT & PRESSURE ROLL of the *FUSER ASSY* (PL6.1.7) ANALYSIS** Check the rotation of the Heat and Pressure Rolls using MAIN MOTOR TEST. **Are the Heat and Pressure Rolls rotating normally?**	Go to step 15.	Replace the *Fuser Assy* (RRP6.1.3).
15	**DECURL ROLL of the *FUSER ASSY* (PL6.1.7) ANALYSIS** 1. Open the *Cover Rear* (PL1.2.5) and cheat the *Switch Assy I/L Rear* (PL10.1.7). 2. Execute a test print to check the Decurl Roll. **Does the paper pass through the Decurl Roll without problems?**	Go to step 16	Replace the *Fuser Assy* (RRP6.1.3)
16	**ACTUATOR EXIT of the *Fuser Assy* (PL6.1.7) ANALYSIS** **Does the Exit Actuator move smoothly when a sheet of paper strikes it?**	Go to step 17.	Replace the *Fuser Assy* (RRP6.1.3).
17	**SENSOR EXIT of the *Fuser Assy* (PL6.1.7) ANALYSIS** Check the Sensor Exit function using SENSOR/SWITCH CHECK. **Does the Sensor Exit function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *Fuser Assy* (RRP6.1.3).

3.10 E3-2:REG JAM

There is a paper jam at the Regi position.

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Sensor Photo:Regi* (PL5.1.12) • *Actuator Regi* (PL5.1.10) • *PWBA Conn* (PL10.1.11) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *Gear Assy Drive* (PL8.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	**Is the paper that is loaded in the paper tray wrinkled or damaged?**	Replace with fresh, dry paper.	Go to step 3.
3	**Is there a sheet of paper at the Actuator Regi when the E3 code appears?**	Remove the jammed paper.	Go to step 4.
4	***SENSOR PHOTO REGI* (PL5.1.12) ANALYSIS** 1. Use SENSOR/ SWITCH CHECK to check the *Sensor Photo: Regi*. 2. Use a sheet of paper to actuate the sensor. **Does the *Sensor Regi* function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Go to step 5.	Replace the *Sensor Photo: Regi* (RRP5.1.5).
5	***HARNESS ASSY REGI (J43-J431, J432)* (PL5.1.28) ANALYSIS** 1. Disconnect the *Harness Assy Regi (J43-J431, J432)* from the *PWBA Conn (PL10.1.11)*. 2. Check the continuity between J43-3 <=> J432-3, J43-4 <=> J432-2 and J43-5 <=> J432-1. **Is there the continuity between J43-3 <=> J423-3, J43-4 <=> J432-2 and J43-5 <=> J432-1?**	Go to step 6.	Replace the *Harness Assy Regi (J43-J431, J432).*

3.10 E3-2:REG JAM continued

Step	Actions and Questions	Yes	No
6	***PWBA CONN* (PL10.1.11) ANALYSIS** 1. Disconnect the *Harness Assy Conn (J23-J231)* (PL10.1.10) from the *PWBA HKB26 MCU* (PL10.1.13). 2. Check the continuity between P231-7 <=> P41-3, P231-6 <=> P41-5 and P231-10 <=> P43-4. **Is there the continuity between J231-7 <=> J41-3, J231-6 <=> J41-5 and J231-10 <=> J43-4?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *PWBA Conn* (RRP10.1.5).

3.11 E2-0:EARLY FEED JAM

There is a paper jam at the Sensor Photo:Regi. The paper arrives at the Sensor Photo:Regi too early.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *Chute CST*(PL5.1.27) • *Chute Bottom Lower* (PL5.1.26) • *Sensor Photo:Regi* (PL5.1.12) • *Actuator Regi* (PL5.1.10) • *Spring Sensor Regi* (PL5.1.11) • *Clutch Regi* (PL5.1.19) • *Roll Regi Metal* (PL5.1.5) • *Roll Regi Rubber* (PL5.1.7) • *Roll Assy* (PL2.2.8) of the *Cassette Sub-Assy* (PL2.2.1) • *Option Feeder Assy* (PL11.1.1) • *Gear Assy Drive* (PL8.1.13) • *PWBA Conn* (PL10.1.11) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *Harness Assy Regi (J43-J431, J423)* (PL5.1.28) • *Harness Assy Conn (J23-J231)* (PL10.1.10) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem component.
2	**Is a piece of paper or foreign object actuating the *Sensor Photo:Regi* (PL5.1.12)?**	Remove the piece of paper or foreign object.	Go to step 3.
3	***ROLL ASSY* (PL2.2.8) and the *CLUTCH ASSY FRICTION* (PL2.2.7) of the *CASSETTE SUB-ASSY* (PL2.2.1) ANALYSIS** 1. Remove the *CRU* (PL8.1.1). 2. Actuate the *Switch Assy I/L Front* (PL10.1.12). 3. Observe the paper feed from the *Feeder Assy* using MAIN MOTOR TEST. **Is only one sheet of paper fed from the Feeder Assy?**	Go to step 4.	Replace the *Roll Assy* (PL2.2.8) and the *Clutch Assy Friction* (PL2.2.7).

3.11 E2-0:EARLY FEED JAM continued

Step	Actions and Questions	Yes	No
4	***ACTUATOR CST* (PL21.1.19) ANALYSIS** Remove the *Cassette Assy* (PL2.1.1). Inspect the combination of the *Actuator CST*. **Does the combination of the *Actuator CST* show the correct combination for the paper size present in the cassette?**	Go to step 5.	Replace the loaded paper to the proper one.
5	***ACTUATOR REGI* (PL5.1.10) ANALYSIS** **Does the *Actuator Regi* expose the sensing point of the *Sensor Photo:Regi* (PL5.1.12) when a sheet of paper strikes the actuator, and does the *Actuator Regi* block the sensing point of the *Sensor Photo:Regi* when there is no paper striking the actuator?**	Go to step 6.	Replace the *Actuator Regi* (RRP5.1.3).
6	***SENSOR PHOTO:REGI* (PL5.1.12) ANALYSIS** Use SENSOR/SWITCH CHECK to check the *Sensor Photo Regi*. **Does the *Sensor Photo:Regi* function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Go to 7.7 Sensor Photo:Regi Failure.

3.12 E2-1:MISFEED JAM

There is a paper jam at the Sensor Photo:Regi. The paper does not reach the Sensor Photo:Regi within the specified time.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *Cassette Assy* (PL21.1.1) • *Feeder Assy* (PL3.1.19) • *Clutch Assy Feed* (PL3.1.37) • *Sensor Photo: Face Control Paper* (PL3.1.13) • *Motor Assy* (PL2.2.22) • *Clutch Assy Turn* (PL3.1.2) • *Roll Assy Turn* (PL3.1.1) • *Chute CST* (PL5.1.27) • *Chute Bottom Lower* (PL5.1.26) • *Sensor Photo:Regi* (PL5.1.12) • *Actuator Regi* (PL5.1.10) • *Spring Sensor Regi* (PL5.1.11) • *Clutch Regi* (PL5.1.19) • *Roll Regi Metal* (PL5.1.5) • *Roll Regi Rubber* (PL5.1.7) • *Roll Assy* (PL2.2.8) of the *Cassette Sub-Assy* (PL2.2.1) • *Option Feeder Assy* (PL11.1.1) • *Gear Assy Drive* (PL8.1.13) • *PWBA Feeder* (PL3.1.36 or PL11.2.36) • *PWBA Side 1* (PL 9.1.19) • *PWBA Conn* (PL10.1.11) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *Harness Assy Regi (J43-J431, J423)* (PL5.1.28) • *Harness Assy Feeder (J33-J331)* (PL9.1.13) • *Harness Assy Size M (J51-P511)* (PL9.1.20) • *Harness Assy Conn (J23-J231)* (PL10.1.10)	Go to step 2.	Replace the problem component.
2	**Is the paper that is loaded in the paper tray wrinkled or damaged?**	Replace with fresh, dry paper.	Go to step 3.

3.12 E2-1:MISFEED JAM continued

Step	Actions and Questions	Yes	No
3	**Is there a sheet of paper before the *Actuator Regi* when the E2-1 code appears?**	Remove the jammed paper.	Go to step 4.
4	**PAPER SIZE ANALYSIS** 1. Check the size of paper currently loaded. 2. A paper jam can occur if the paper used is larger or smaller than the maximum or minimum size specified for this printer. **Does the paper size meet specifications?**	Go to step 5.	Load paper that meets specifications.
5	***GEAR ASSY DRIVE* (PL8.1.13) ANALYSIS** 1. Use MAIN MOTOR TEST to check the *Gear Assy Drive* function. 2. Open the *Cover Assy Front* (PL1.1.9). 3. Remove the *CRU* (PL8.1.1). 4. Actuate the *Switch Assy I/L Front* (PL10.1.12). **Do the transmission gears rotate correctly against those of the *Roll Assy Turn* (PL3.1.1), the *Feeder Assy* (PL3.1.19), *Clutch Regi* (PL5.1.19)?**	Go to step 6.	Replace the *Gear Assy Drive* (RRP8.1.3).
6	***PLATE ASSY BOTTOM* (PL2.1.2) ANALYSIS** Inspect the *Plate Assy Bottom* to be lifted up smoothly by manual. **Is the *Plate Assy Bottom* lifted up smoothly?**	Go to step 9.	Go to step 7.
7	***MOTOR ASSY* (PL2.2.22) ANALYSIS** 1. Pull out the *Cassette Assy* and remove the loaded paper remaining minimum sheets that does not actuate the *Actuator N/P* (PL3.1.6). 2. Reinstall the *Cassette Assy* and execute test print. **Is the *Plate Assy Bottom* lifted up by the *Motor Assy* and a sheet of paper fed normally?**	Go to step 9.	Go to step 8.

3.12 E2-1:MISFEED JAM continued

Tray 1 is out of paper.

Step	Actions and Questions	Yes	No
8	***SENSOR PHOTO:FACE CONTROL PAPER*** **(PL3.1.13) ANALYSIS** 1. Pull out the *Cassette Assy*. 2. Check the *Sensor Photo: Face Control Paper* using SENSOR/SWITCH CHECK. 3. Shield and expose the sensing point of the *Sensor Photo: Face Control Paper* by lifting up and down the *Support Assy Nudger* (PL3.1.22) manually. **Does the *Sensor Photo: Face Control Paper* function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Go to step 9.	Replace the *Sensor Photo:Face Control Paper* (RRP3.1.4).
9	***FEEDER ASSY*** **(PL3.1.19) ANALYSIS** 1. Pull out the *Cassette Assy*. 2. Inspect the rotation of the *Feeder Assy* using MAIN MOTOR TEST. **Does the Feeder Assy rotate normally?**	Go to step 11.	Go to step 10
10	**CLUTCH ASSY FEED (PL3.1.37) ANALYSIS** Check the continuity between P/J651-4 and P/J651-1. **Is there the continuity between P/J651-4 and P/J651-1?**	Go to step 11.	Replace the *Clutch Assy Feed* (RRP3.1.8).
11	**ROLL ASSY TURN (PL3.1.1)** Inspect the *Spring Extension* (PL3.1.3) and Rolls of the *Roll Assy Turn*. **Do the Rolls contact properly respectively?**	Go to step 12.	Replace the *Roll Assy Turn* (PL3.1.1)
12	**CLUTCH ASSY TURN (PL3.1.2) ANALYSIS** Check the continuity between P/J641-4 and P/J641-1. **Is there the continuity between P/J641-4 and P/J641-1?**	Replace the *PWBA Feeder* (PL3.1.2)	Replace the *Clutch Assy Turn* (PL3.1.2)

3.13 C5:ADD PAPER TO TRAY 1/2/3

Tray 1 is out of paper.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *Actuator N/P* (PL3.1.6) • Sensor Photo:No Pap1 on the *PWBA Feeder* (PL3.1.36) • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	Load paper in the Tray 1. **Does the C5 still appear?**	Go to step 3.	Problem is solved.
3	**SENSOR PHOTO:NO PAP1 on the *PWBA FEEDER* (PL3.1.36) ANALISIS** Check the function of the Sensor Photo:No Pap1 using SENSOR/SWITCH CHECK. **Does the *Sensor Photo:No Pap 1* function correctly and increment the Sensor Check number on the screen each time you actuate it?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *PWBA Feeder* (RRP3.1.7).

3.14 C5:ILLEGAL SIZE

The standard exit paper tray is the state of full stack.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *Cassette Assy* (PL2.1.2) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	Adjust the Guide Assy End with the end of paper stack properly. **Does the error C5 still displayed?**	Go to step 3.	Problem is solved.
3	***ACTUATOR CST* (PL21.1.19) ANALYSIS** Remove the *Cassette Assy* (PL2.1.1). Inspect the combination of the *Actuator CST*. **Does the combination of the *Actuator CST* show the correct combination for the paper size present in the cassette?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *Cassette Assy*.

3.15 C3:TRAY 1/2/3 OUT INSTALL TRAY

The Tray 1 is not installed or installed not in the position.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *Cassette Assy* (PL2.1.2) • *Motor Assy* (PL2.2.22) • *Connector* (PL2.2.25) • *Harness Assy N/MOT* (PL3.1.39) • *PWBA Feeder* (PL3.1.36) • *PWBA Size 1* (PL9.1.19) • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem components.
2	Reinstall the Cassette Assy correctly. **Does the error C5 still displayed?**	Go to step 3.	Problem is solved.
3	***HARNESS ASSY N/MOT*(PL3.1.39) ANALYSIS** 1. Disconnect the Harness Assy N/MOT. 2. Check the continuity between J67-5 <=> J671-1, J67-3 <=> J671-4, and J67-1 <=> J671-7. **Is there the continuity between J67-5 <=> J671-1, J67-3 <=> J671-4, and J67-1 <=> J671-7?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *Harness Assy N/MOT* (PL3.1.39).

3.16 J5:LOW TONER NEED TO REPLACE PLEASE WAIT

The Toner Sensor is actuated while warming up.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *CRU* (PL8.1.1) • *Toner Sensor* (PL5.1.1) • *Harness Assy Toner Sensor* (J42-J421) (PL5.1.32) • *Harness Assy Conn (J23-J231)* (PL10.1.10) • *PWBA Conn* (PL10.1.11) • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	Replace the *CRU* with new one. **Does the J5 error still appear?**	Go to step 3.	Problem is solved.
3	***HARNESS ASSY TONER SENSOR (J42-J421)* (PL5.1.32) ANALYSIS** Check the continuity between J42-1 <=> J421-4, J42-3 <=> J421-2, and J42-4 <=> J421-1. **Is there the continuity between J42-1 <=> J421-4, J42-3 <=> J421-2, and J42-4 <=> J421-1?**	Go to step 4.	Replace the *Harness Assy Toner Sensor* (PL5.1.32)
4	***PWBA CONN* (PL10.1.11) ANALYSIS** 1. Disconnect J42 and J231 from the *PWBA Conn*. 2. Check the continuity between P42-4 <=> P231-9, P42-3 <=> P231-11, and P42-1 <=> P231-11. **Is there the continuity between P42-4 <=> P231-9, P42-3 <=> P231-11, and P42-1 <=> P231-11?**	Go to step 5.	Replace the *PWBA Conn* (RRP10.1.5)
5	***Harness Assy Conn (J23-J231)* (PL10.1.10) ANALYSIS** 1. Disconnect J231 from the *PWBA Conn* and J23 from the *PWBA HKB26 MCU*. 2. Check the continuity between J23-8 <=> J231-9, J23-6 <=> J231-11, and J23-5 <=> J231-12. **Is there the continuity between J23-8 <=> J231-9, J23-6 <=> J231-11, and J23-5 <=> J231-12?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *Harness Assy Conn (J23-J231)*

3.17 J3:EP CARTRIDGE NOT IN POSITION

The CRU is not installed or installed not in the position.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *CRU* (PL8.1.1) • *Sensor Assy CRU* (PL8.1.6) • *Harness Assy CRU SNS (J25-J251)* (PL8.1.2) • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	Reinstall the *CRU*. **Does the J3 error still appear?**	Go to step 3.	Problem is solved.
3	***HARNESS ASSY CRU SNS (J25-J251)* (PL8.1.2) ANALYSIS** 1. Disconnect J25 from the *PWBA HKB26 MCU* and J251 from the *Sensor Assy CRU*. 2. Check the continuity between J25-1 <=> J251-4, and J25-2 <=> J251-3. **Is there the continuity between J25-1 <=> J251-4, and J25-2 <=> J251-3?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Replace the *Harness Assy CRU SNS*.

3.18 P1:FUSER PAUSE

The printer received a SET PAUSE command.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	Turn the Main Power OFF and ON. **Does the P1 error still appear?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Problem is solved.

3.19 PAPER SIZE ERROR

The size of the paper loaded in the paper tray is different than the paper size stored in NVRAM.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *Feeder Assy* (PL3.1.19) • *Roll Regi Metal* (PL5.1.5) • *Roll Regi Rubber* (PL5.1.7) • *Sensor Photo:Regi* (PL5.1.12) • *Clutch Assy Feed* (PL3.1.37) • *Clutch Assy Turn* (PL3.1.2) • *Option Feeder Assy* (PL11.1.1) • *Cassette Assy* (PL2.1.1) • Switch Size on the *PWBA Size1* (PL9.1.19) • *PWBA HKB26 MCU* (PL9.1.13) • *Harness Assy Feeder* (PL9.1.13) • *PWBA HKB PS* (PL10.1.17)	Go to step 2	Replace the problem components
2	***ACTUATOR CST* (PL21.1.19) ANALYSIS** Remove the *Cassette Assy* (PL2.1.1). Inspect the combination of the *Actuator CST*. **Does the combination of the *Actuator CST* show the correct combination for the paper size present in the cassette?**	Go to step 3.	Replace the Cassette Assy.
3	**SWITCH SIZE *on the PWBA SIZE 1* (PL3.1.36) ANALYSIS** Inspect the Switch Size as you insert the *Cassette Assy* into the *Feeder*. **Does the Switch Size reflect a switch combination that corresponds to the size of the paper loaded in the Cassette Assy?**	Go to step 4.	Go to 6.12 Switch Size Failure.
4	***ACTUATOR REGI* (PL5.1.10) ANALYSIS** **Does the *Actuator Regi* expose the sensing point of the Sensor Photo:Regi when a sheet of paper strikes the actuator, and does the *Actuator Regi* shield the sensing point of the *Sensor Regi* when there is no paper striking the actuator?**	Go to step 5.	Replace the *Actuator Regi* (RRP5.1.3)
5	***SENSOR PHOTO:REGI* (PL5.1.12) ANALYSIS** Use SENSOR/SWITCH CHECK to check the *Sensor Photo:Regi*. **Does the Sensor Photo:Regi function correctly and increment the displayed SENSOR CHECK number each time you actuate it?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7).	Go to 6.7 Sensor Photo Regi Failure

3.20 FUSER UNIT NEED TO REPLACE PLEASE WAIT

The Fuser Assy is nearing end of life and better to be replaced soon.

Step	Actions and Questions	Yes	No
1	Inspect the following components. • *Fuser Assy* (PL6.1.7) • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2.	Replace the problem component.
2	Replace the *Fuser Assy* with new one. **Does the message still appear?**	Go to step 3.	Problem is solved.
3	Turns the Main Power OFF and ON. **Does the message still appear?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Problem is solved.

3.21 SERVICE ERROR

The system controller has a software fault.

Step	Actions and Questions	Yes	No
1	Service Error codes include the following: Service Error 02 - Controller software error. Service Error 03 - Controller CPU error. Service Error 04 - IPDS fonts not found. Service Error 09 - Incorrect controller hardware revision. Service Error 10 - Task communications error. Service Error 11 - USB NVRAM error. Service Error 12 - Twinax/Coax interface, code download error. Service Error 13 - FLASH memory failure. Service Error 14 - PCL/XL software error. Service Error 15 - Unkown engine type. Service Error 16 - Network interface hardware-configuration error. Service Error 17 - Network Card 1 - initialization timeout error. Service Error 18 - Network Card 2 - initialization timeout error.		
2	For some of the service errors, pressing the Next button may display additional information. Record all information displayed. This may assist in determining the problem. Question the operators to find out everything you can about the jobs that were being printed. Ascertain the setup features requested, was there more that one job sent, etc. Record all information. **Switch the printer power off. Wait 30 seconds, switch the printer power on. The printer displays ready.**	Go to step 3	Go to step 5
3	Have the customer send a different print job. **The print job completed correctly.**	Go to step 4.	Go to step 5.
4	Have the customer send the job(s) that caused the original problem. **The print job completed correctly.**	Problem resolved. Retain all information for future reference.	Go to step 5.
5	Replace the System Controller PWB. **Switch the printer power on. The printer displays ready.**	Go to step 3.	Escalate the problem to the proper level. Be sure to pass on all recorded infomation.

Section 4 Primary FIPs:Printer Performance Problems Contents

4.Primary FIPs:Printer Performance Problems 4-2
4.1 Inoperative Printer 4-4
4.2 Erratic Operation 4-7
4.3 Inoperative Drive Components. 4-8

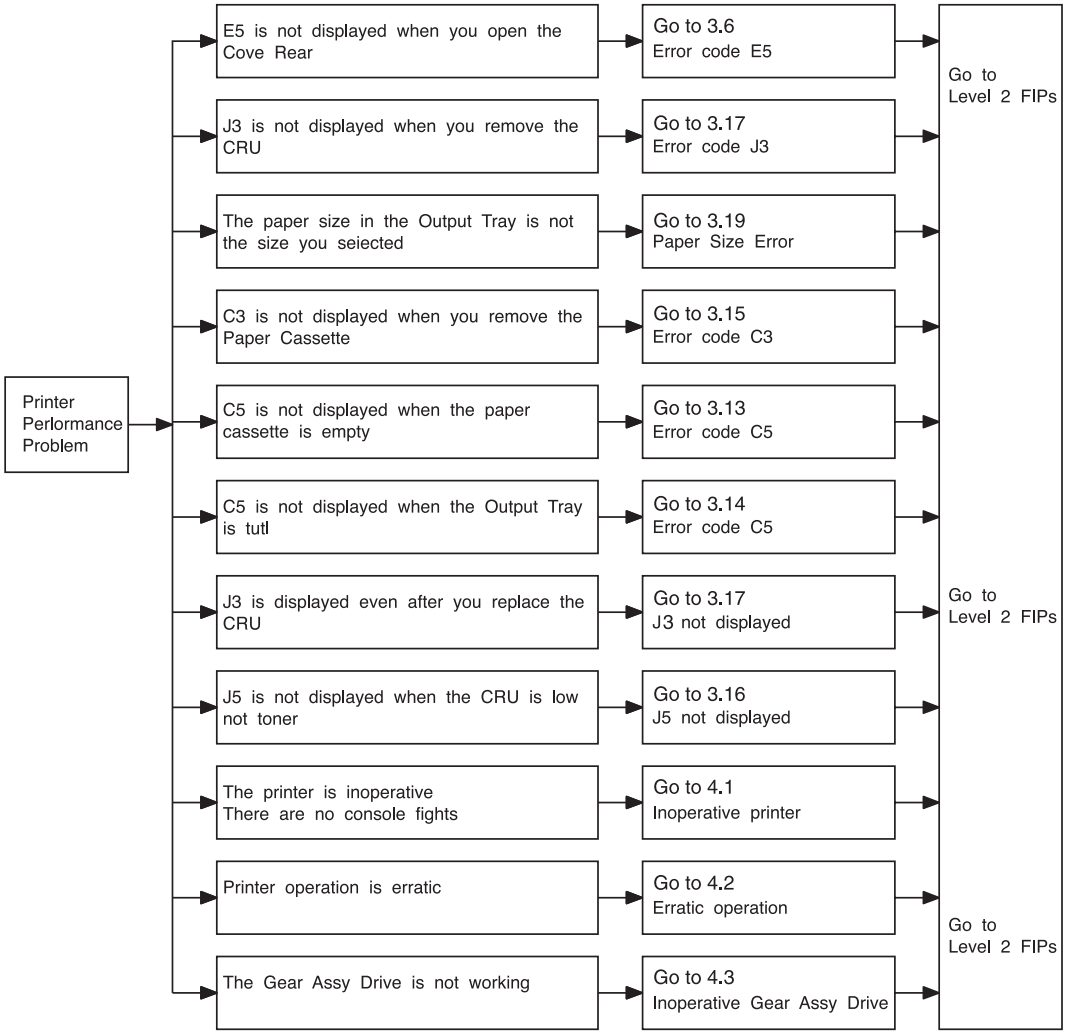
4. Primary FIPs:Printer Performance Problems

Before entering the Printer Performance Problem FIPs, make sure:

1. Is the printer plugged into a recommended AC wall outlet?
2. Is the AC power provided at the wall outlet within recommended specifications?
3. Is the AC power cord connected to the printer.
4. Is the AC power cord in good condition; not frayed or broken?
5. Is the printer properly grounded through the AC wall outlet?
6. Is the printer located in an area where the temperature and humidity are moderate and stable?
7. Is the printer located in an area that is free of dust?
8. Is the printer located in an area away from water outlets, steamers, electric heaters, volatile gases, or open flames?
9. Is the printer shielded from the direct rays of the sun?
10. Does the printer have recommended space around all sides for proper ventilation?
11. Is the printer sitting on a level and stable surface?
12. Is recommended paper stock being used in the printer?
13. Does the customer use the printer as instructed in the HAKUBA User Manual?
14. Are consumables, such as the CRU, replaced at recommended intervals?

Printer Performance Problems Flow Chart

The FIP Flowchart should have directed you to this section. Start at your problem box, then follow the arrow leading to the individual FIP that corresponds to that problem.


Printer Perlormance Problem
E5 is not displayed when you open the Cove Rear
Go to 3.6 Error code E5
J3 is not displayed when you remove the CRU
Go to 3.17 Error code J3
The paper size in the Output Tray is not the size you seiected
Go to 3.19 Paper Size Error
C3 is not displayed when you remove the Paper Cassette
Go to 3.15 Error code C3
C5 is not displayed when the paper cassette is empty
Go to 3.13 Error code C5
C5 is not displayed when the Output Tray is tutl
Go to 3.14 Error code C5
J3 is displayed even after you replace the CRU
Go to 3.17 J3 not displayed
J5 is not displayed when the CRU is low not toner
Go to 3.16 J5 not displayed
The printer is inoperative There are no console fights
Go to 4.1 Inoperative printer
Printer operation is erratic
Go to 4.2 Erratic operation
The Gear Assy Drive is not working
Go to 4.3 Inoperative Gear Assy Drive
Go to Level 2 FIPs
Go to Level 2 FIPs
Go to Level 2 FIPs

engine fip4001FA

4.1 Inoperative Printer

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Co0ntrol Assy Panel* (PL1.1.6) • *PWB ESS* (PL10.1.2) • *PWBA HKB PS* (PL10.1.17) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HVPS* (PL10.1.20) • *Fan Assy* (PL9.1.7) • *Solenoid Pick Up* (PL4.1.23) • *Clutch Regi* (5.1.19) • *Clutch Assy Feed* (PL3.1.37) • *Clutch Assy Turn* (PL3.1.2) • *Motor Assy Main* (PL8.1.14) • *Sensor Assy Toner* (PL5.1.1)	Go to step 2.	Replace the problem components.
2	***CONTROL ASSY PANEL* (PL1.1.6) ANALYSIS** 1. Disconnect P/J 362 on the *PWBA ESS*. 2. Switch ON the Main Power. **Does the *Fan Assy* function normally?**	Replace the *Control Assy Panel* (RRP1.1.5).	Go to step 3.
3	***PWB ESS* (PL10.1.2) ANALYSIS** 1. Unplug the interface cable between the *PWB ESS* and the *PWBA HKB26 MCU*. 2. Switch ON the Main Power. **Does the *Fan Assy* function normally?**	Replace the *PWB ESS* (RRP10.1.1).	Go to step 4.
4	***PWBA HKB PS* (PL10.1.17) ANALYSIS** 1. Disconnect P/J28 on the *PWBA HKB26 MCU*. 2. Switch ON the Main Power. 3. Read voltage within 30 seconds after switching on the Main Power. **Are the following voltages present on the pins of J28?** **Is there +3.3VDC between J28-10 and J28-8?** **Is there+5VDC between J28-7 and J28-8?** **Is there +24VDC between J28-1 and J28-8?** **Is there +24VDC between J28–2 and J28-8?** **Is there +24VDC between J28-1 and J28-8?**	Go to step 5.	Replace the *PWBA HKB PS* (RRP10.1.9).

4.1 Inoperative Printer continued

Step	Actions and Questions	Yes	No
5	***PWBA HVPS*(PL10.1.20) ANALYSIS** Unplug P/J11 on the *PWBA HVPS*. Switch ON Main Power. **Does the Fan function normally?**	Replace the *PWBA HVPS* (RRP10.1.11)	Go to step 6
6	***FAN ASSY* (PL9.1.7) ANALYSIS** Unplug P/J283 on the *PWBA HKB26 MCU*. Switch ON Main Power. Check the voltage between P283-1 and P283-3. **Is there +24VDC between P283-1 and P283-3?**	Replace the *Fan Assy* (RRP9.1.2)	Go to step 7
7	***CLUTCH ASSY FEED* (PL3.1.37) ANALYSIS** Disconnect P/J65 from the *PWBA Feeder*. Switch ON Main Power. **Does the Fan function normally?**	Replace the *Clutch Assy Feeder* (RRP3.1.8)	Go to step 8
8	***CLUTCH ASSY TURN* (PL3.1.2) ANALYSIS** Disconnect P/J64 from the *PWBA Feeder*. Switch ON Main Power. **Does the Fan function normally?**	Replace the *Clutch Assy Turn* (PL3.1.2)	Go to step 9
9	***MOTOR ASSY* (PL2.2.22) ANALYSIS** Disconnect P/J67 from the *PWBA Feeder*. Switch ON Main Power. **Does the Fan function normally?**	Replace the *Motor Assy* (RRP2.2.4)	Go to step 10
10	***SOLENOID PICK UP* (PL4.1.23) ANALYSIS** Disconnect P/J44 from the *PWBA Feeder*. Switch ON Main Power. **Does the Fan function normally?**	Replace the *Solenoid Pick Up* (RRP4.1.8)	Go to step 11
11	***CLUTCH REGI* (PL5.1.19) ANALYSIS** Disconnect P/J43 from the *PWBA Feeder*. Switch ON Main Power. **Does the Fan function normally?**	Replace the *Clutch Regi* (RRP5.1.9)	Go to step 12
12	***MOTOR ASSY MAIN* (PL8.1.14) ANALYSIS** Disconnect P/J 29 from the *PWB HKB MCU*. Switch ON Main Power. **Does the Fan function normally?**	Replace the *Motor Assy Main* (RRP8.1.4)	Go to step 13

4.1 Inoperative Printer continued

Step	Actions and Questions	Yes	No
13	***TONER SENSOR* (PL5.1.1) ANALYSIS** Disconnect P/J 42 from the *PWBA Conn*. Switch ON Main Power. **Does the Fan function normally?**	Replace the *Toner Sensor* (RRP5.1.11)	Go to step 14
14	***ROS ASSY* (PL8.1.9) ANALYSIS** Unplug P/J21 from the *PWBA HKB26 MCU*. Switch ON Main Power **Does the Fan function normally?**	Replace the *ROS Assy* (RRP8.1.2)	Replace the *PWBA HKB26 MCU* (RRP10.1.7)

4.2 Erratic Operation

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB26 MCU* (PL10.1.3) • *PWBA HVPS* (PL10.1.20) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	**Does the printer enter a print cycle?**	Go to step 3	Go to step 4
3	Enter DIAGNOSTIC MODE MENU. **Can you enter the DIAGNOSTIC MODE MENUE?**	Go to step 5	Replace the *PWBA HKB26 MCU* (RRP10.1.7)
4	**Does the printer RESET while it is making a test print?**	Go to 6.22 Electrical Noise	Go to step 5
5	Install a new *PWBA HKB26 MCU*. **Does erratic operation still occur?**	Replace the *PWB ESS* (RRP10.1.1)	Problem solved

4.3 Inoperative Drive Components

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Gear Assy Drive* (PL8.1.13) • *Motor Assy Main* (PL8.1.14) • *PWBA HKB PS* (PL10.1.17) • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***GEAR ASSY DRIVE* (PL8.1.13) ANALYSIS** Use MAIN MOTOR TEST to check the *Gear Assy Drive* function. **Do the *Gear Assy Drive* rotate smoothly?**	Go to step 3	Replace the *Gear Assy Drive* (RRP8.1.3)
3	***MOTOR ASSY MAIN* (PL8.1.14) ANALYSIS** Use MAIN MOTOR TEST to check the *Motor Assy Main* function. **Does the *Motor Assy Main* function correctly?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Go to 7.16 Drive Components Failure

Blank Page

Section 5 Primary FIPs:Image Quality Problems Contents

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Blank Page

Image Quality Problems

The FIP Flowchart or a Level 1 FIP should have directed you to this section.

Before entering the Image Quality FIPs, make sure:

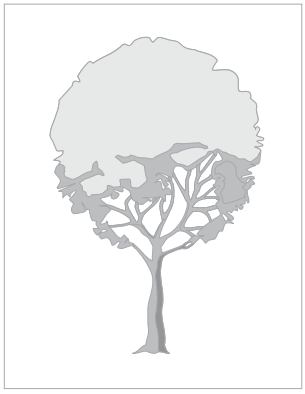
1. Is the printer plugged into a recommended AC wall outlet?
2. Is the AC power provided at the wall outlet within recommended specifications?
3. Is the AC power cord connected to the printer.
4. Is the AC power cord in good condition; not frayed or broken?
5. Is the printer properly grounded through the AC wall outlet?
6. Is the printer located in an area where the temperature and humidity are moderate and stable?
7. Is the printer located in an area that is free of dust?
8. Is the printer located in an area away from water outlets, steamers, electric heaters, volatile gases, or open flames?
9. Is the printer shielded from the direct rays of the sun?
10. Does the printer have recommended space around all sides for proper ventilation?
11. Is the printer sitting on a level and stable surface?
12. Is recommended paper stock being used in the printer?
13. Does the customer use the printer as instructed in the HAKUBA User Manual?
14. Are consumables, such as the CRU, replaced at recommended intervals?

Use Letter–size or A4 paper when troubleshooting an image quality problem.

Image Quality FIPs assume there is no malfunction of the printer controller. Use Printing Test Mode to determine whether an image quality problem is being caused by the printer engine or by the printer controller. The printer engine generates the test print. If the test print is normal, but the regular prints have a image quality problem, the problem may be with the printer controller.

If you are unable to solve the image problem using the Image Quality FIPs, we recommend that you replace the printer controller with a known good controller. If the problem still persists, we recommend you replace each component listed in Initial Analysis of the problem FIP, one by one, until you solve the problem.

5.1 Light (Undertoned) Prints



engine fip5001FA

PROBLEM

The overall image density is too light.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- **CRU**
- **Spring Clip**
- **Chute Trans Assy**
- **PWB HKB26 MCU**
- **PWBA HKB PS**
- **HVPS**
- **BTR Assy**
- **ROS Assy**
- **Harness Assy Conn (J23-J231)**
- **Fuser Assy**
- **Harness Assy Fuser-M (J271, J11, J27, J262)**
- **Cover Assy Front**

2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**PAPER CONDITIONS** **Is there moisture in the paper?**	Load fresh, dry paper.	Go to step 2
2	**DRUM GROUND** Check the Drum Ground Path: Drum>Drum Shaft Pin>Spring Clip > Frame. **Is the Drum Ground Path complete?**	Go to step 3	Re-establish the Drum Ground Path
3	**LASER BEAM PATH** Inspect the laser beam path, between the *ROS Assy* and the Drum, for contamination or obstructions. **Is the laser beam path free of obstacles?**	Go to step 4	Remove obstructions or contamination.
4	**BTR ASSY** Inspect the BTR Assy for contamination. **Is the BTR free of contamination?**	Go to step 5	Replace the *BTR Assy*

5.1 Light (Undertoned) Prints continued

Step	Actions and Questions	Yes	No
5	**IMAGE TRANSFER PROCESS FAILURE** Generate a test print and switch OFF printer power halfway through the print cycle. Remove the *CRU* and inspect the toner image on the drum. **Was the image on the drum transferred completely to the paper?**	Go to step 6	Go to 6.19 HVPS Failure
6	**CRU FAILURE** Install a new *CRU*. **Is the problem solved?**	Problem solved	Return to Initial Analysis

5.2 Blank Prints

PROBLEM

The entire print is blank.

INITIAL ANALYSIS

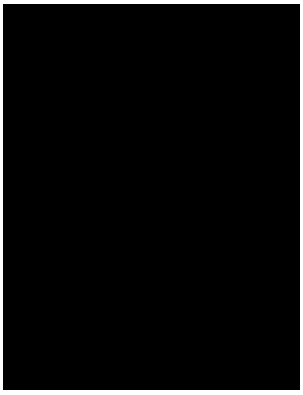
1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **BTR Assy**
   - **P/H Assy**
   - **Harness Assy Conn (J23-J231)**
   - **PWBA HKB PS**
   - **Fuser Assy**
   - **Harness Assy Fuser (J271, J11, J27, J262)**
   - **PWBA HVPS**
   - **ROS Assy**
   - **PWBA HKB26 MCU**
   - **Cover Assy Front**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**DRUM GROUND** Check the Drum Ground Path: Drum>Drum Shaft Pin >Spring Clip > Frame. **Is the Drum Ground Path complete?**	Go to step 2	Re-establish the Drum Ground Path
2	**LASER BEAM PATH** Inspect the laser beam path, between the *ROS Assy* and the Drum, for contamination or obstructions. **Is the laser beam path free of obstacles?**	Go to step 3	Remove obstructions or contamination.
3	***BTR ASSY*** Inspect the *BTR Assy* for contamination. **Is the *BTR* free of contamination?**	Go to step 4.	Replace the *BTR Assy*
4	**IMAGE TRANSFER PROCESS FAILURE** Generate a test print and switch OFF printer power halfway through the print cycle. Remove the *CRU* and inspect the image on the drum. **Was the image on the drum transferred to the paper?**	Go to step 5	Go to 6.19 PWBA HVPS Failure

5.2 Blank Prints continued

Step	Actions and Questions	Yes	No
5	***CRU* FAILURE** Install a new *CRU*. **Is the problem solved?**	Problem solved	Return to Initial Analysis

5.3 Black Prints



PROBLEM

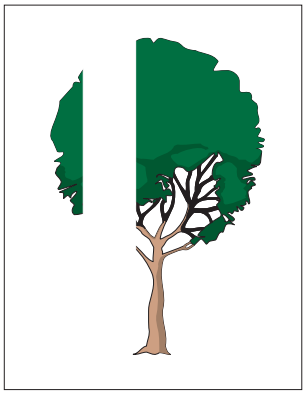
The entire print is black.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **Spring Clip**
   - **PWBA HKB26 MCU**
   - **PWBA HVPS**
   - **ROS Assy**
   - **Harness Assy HVPS (J26-J261)**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**HVPS CR** Use a sheet of paper to cover the laser beam window. Generate a test print. **Is the problem still present?**	Go to step 2	Go to 6.19 PWBA HVPS Failure
2	***ROS ASSY* FAILURE** Use a sheet of paper to cover HALF of the laser beam window. Generate a test print. **Is the problem still present only on the uncovered half?**	Go to step 3	Go to 6.3 ROS Assy Failure
3	***CRU* FAILURE** Install a new *CRU*. **Is the problem solved?**	Problem solved	Return to Initial Analysis

5.4 Vertical Band Deletions



engine fip5002FA

PROBLEM

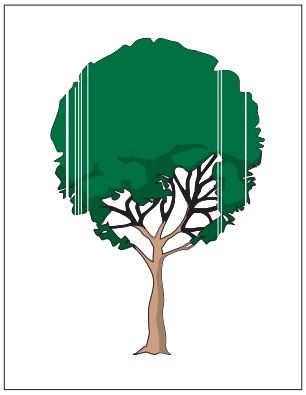
There are areas of the image that are extremely light or missing entirely. These missing areas form wide bands that run vertically along the page, in the direction of paper travel.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **Fuser Assy**
   - **ROS Assy**
   - **PWBA HKB26 MCU**
   - **BTR Assy**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**PAPER CONDITIONS** **Is there moisture in the paper?** **Is the paper wrinkled?**	Replace with fresh, dry paper	Go to step 2
2	**LASER BEAM PATH** Inspect the laser beam path, between the *ROS Assy* and the Drum, for contamination or obstructions. **Is the laser beam path free of obstacles?**	Go to step 3	Remove obstructions or contamination.
3	***BTR Assy*** Inspect the *BTR Assy* for contamination. **Is the *BTR* free of contamination?**	Go to step 4	Replace the *BTR Assy*.
4	***CRU* FAILURE** Install a new *CRU*. **Is the problem solved?**	Problem solved	Return to Initial Analysis

5.5 Vertical Linear Deletions



engine fip5003FA

PROBLEM

There are areas of the image that are extremely light or missing entirely. These missing areas form narrow lines running vertically along the pages, in the direction of paper travel.

INITIAL ANALYSIS

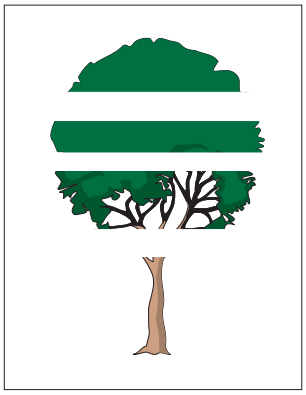
1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- **CRU**
- **BTR Assy**
- **Heat Roll**
- **Fuser Assy**
- **PWBA HKB26 MCU**
- **BTR Chute Assy**
- **Pressure Roll Assy**
- **ROS Assy**

2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**LASER BEAM PATH** Inspect the laser beam path, between the *ROS Assy* and the Drum, for contamination or obstructions. **Is the laser beam path free of obstacles?**	Go to step 2	Remove obstructions or contamination.
2	***BTR Assy*** Inspect the *BTR Assy* for contamination. **Is the *BTR* free of contamination?**	Go to step 3	Replace the *BTR Assy*
3	***CRU* FAILURE** Replace the *CRU* with a new one. **Is the problem solved?**	Problem solved	Go to step 4
4	**HEAT ROLL DAMAGE** Inspect the Heat Roll for scratches, objects, or contamination. **Is the Heat Roll free of scratches and contamination?**	Go to step 5	Replace the Heat Roll
5	**PAPER PATH** Inspect the paper path, between feed and exit, for contamination or obstructions. **Is the paper path free of obstructions?**	Return to Initial Analysis	Remove obstructions or contamination from the paper path.

5.6 Horizontal Band Deletions



engine fip5004FA

PROBLEM

There are areas of the image that are extremely light or missing entirely. These missing areas form wide bands that run horizontally across the page, parallel with the direction of paper travel.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- **CRU**
- **PWBA HVPS**
- **BTR Assy**
- **Heat Roll**
- **Fuser Assy**
- **PWBA HKB26 MCU**
- **Spring Clip**
- **BTR Chute Assy**
- **Pressure Roll Assy**
- **ROS Assy**

2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

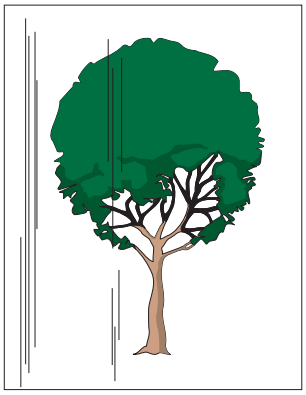
Step	Actions and Questions	Yes	No
1	**PAPER CONDITIONS** **Is there moisture in the paper?** **Is the paper wrinkled?**	Replace with fresh, dry paper	Go to step 2
2	**DRIVE COMPONENTS FAILURE** Use MAIN MOTOR TEST to check the *Gear Assy Drive*. **Are the Drive Assy gears turning the *CRU* gear?**	Go to step 3	Go to 6.11 Drive Components Failure
3	***BTR Assy*** Inspect the *BTR Assy* for contamination. **Is the *BTR* free of contamination?**	Go to step 4	Replace the *BTR Assy*
4	**IMAGE TRANSFER PROCESS FAILURE** Generate a test print and switch OFF printer power halfway through the print cycle. Remove the *CRU* and inspect the toner image on the drum. **Was the image on the drum transferred completely to the paper?**	Go to step 5	Go to 6.19 PWBA HVPS Failure

Table continued

5.6 Horizontal Band Deletions continued

Step	Actions and Questions	Yes	No
6	***CRU* FAILURE** Replace the *CRU* with a new one. **Is the problem solved?**	Problem solved	Go to step 7
7	**HEAT ROLL DAMAGE** **Do the band deletions occur at intervals of approximately 104 mm?**	Clean or replace the Heat Roll	Go to step 8
8	**PRESSURE ROLL DAMAGE** **Do the band deletions occur at intervals of approximately 94 mm?**	Clean or replace the Pressure Roll Assy	Return to Initial Analysis

5.7 Vertical Streaks



engine fip5005FA

PROBLEM

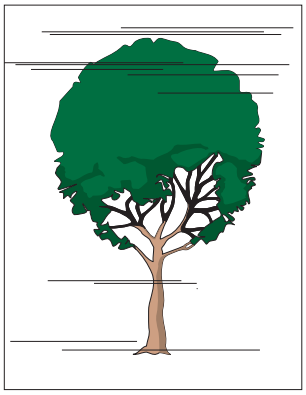
There are black lines running vertically along the page.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **PWBA HVPS**
   - **BTR Assy**
   - **Heat Roll**
   - **Fuser Assy**
   - **PWBA HKB26 MCU**
   - **Spring Clip**
   - **BTR Chute Assy**
   - **Pressure Roll Assy**
   - **ROS Assy**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**LASER BEAM PATH** Inspect the laser beam path, between the *ROS Assy* and the Drum, for contamination or obstructions. **Is the laser beam path free of obstacles?**	Go to step 2	Remove obstructions or contamination.
2	***BTR Assy*** Inspect the *BTR Assy* for contamination. **Is the *BTR* free of contamination?**	Go to step 3	Replace the *BTR Assy*
3	**INCOMPLETE DISCHARGE PROCESS** Remove the *CRU* and leave the *Cover Assy Front* open. Cheat the *Switch Assy I/L Front* and run MAIN MOTOR TEST. **Does the *BTR* function normally?**	Go to Step 4	Replace the *BTR Chute Assy*
4	***CRU* FAILURE** Replace the *CRU* with a new one. **Is the problem solved?**	Problem solved	Go to step 5
5	**HEAT ROLL DAMAGE** **Do the streaks occur at intervals of approximately 104 mm?**	Replace the Heat Roll	Return to Initial Analysis

5.8 Horizontal Streaks



engine fip5006FA

PROBLEM

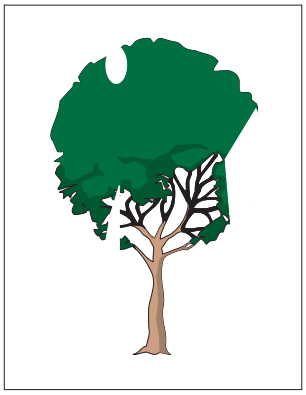
There are black lines running horizontally across the page.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **PWBA HVPS**
   - **BTR Assy**
   - **Heat Roll**
   - **Fuser Assy**
   - **Harness Assy Conn (J23-J231)**
   - **PWBA HKB26 MCU**
   - **Spring Clip**
   - **BTR Chute Assy**
   - **Pressure Roll Assy**
   - **ROS Assy**
   - **PWBA HKB PS**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**DRUM GROUND** Check the Drum Ground Path: Drum>Drum Shaft Pin>Spring Clip > Frame. **Is the Drum Ground Path complete?**	Go to step 2	Re-establish the Drum Ground Path
2	***ROS* Assy** Use a sheet of paper to cover the laser beam window. Generate a test print. **Is the problem still present?**	Go to step 3	Go to 6.3 ROS Assy Failure
3	***BTR Assy*** Inspect the *BTR Assy* for contamination. **Is the *BTR* free of contamination?**	Go to step 4	Replace the *BTR Assy*
4	***CRU* FAILURE** Replace the *CRU* with a new one. **Is the problem solved?**	Problem solved	Go to step 5
5	**HEAT ROLL Assy** Inspect the Heat Roll for scratches, objects, or contamination. **Is the Heat Roll free of scratches and contamination?**	Go to step 6	Replace the Heat Roll
6	**NOISE** Go to 6.20 Electrical Noise for possible noise problem.		

5.9 Spot Deletions



engine fip5007FA

PROBLEM

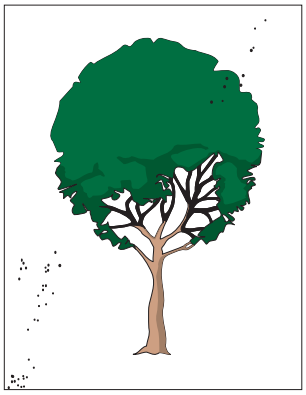
There are areas of the image that are extremely light or missing entirely. These missing areas form spots that are localized to small areas of the page.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **Fuser Assy**
   - **Heat Roll**
   - **BTR Assy**
   - **Pressure Roll Assy**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**PAPER CONDITIONS** **Is there moisture in the paper?** **Is the paper wrinkled?**	Replace with fresh, dry paper.	Go to step 2
2	***BTR Assy*** Inspect the BTR Assy for contamination. **Is the *BTR* free of contamination?**	Go to step 3	Replace the *BTR Assy*
3	***CRU* FAILURE** Replace the *CRU* with a new one. **Is the problem solved?**	Problem solved	Go to step 4
4	**HEAT ROLL DAMAGE** **Do the spot deletions occur at intervals of approximately 62.0mm?**	Replace the Heat Roll	Go to step 5
5	**PRESSURE ROLL DAMAGE** **Do the spot deletions occur at intervals of approximately 61.0mm?**	Replace the Pressure Roll Assy	Return to Initial Analysis

5.10 Spots



engine fip5008FA

PROBLEM

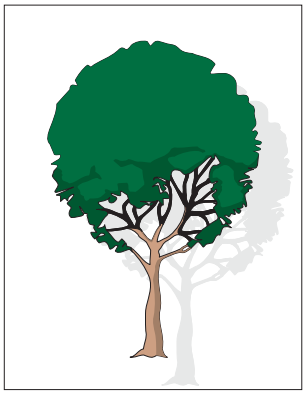
There are spots of toner randomly scattered across the page.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **Heat Roll**
   - **BTR Assy**
   - **Fuser Assy**
   - **Pressure Roll Assy**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	***BTR Assy*** Inspect the BTR Assy for contamination. **Is the BTR free of contamination?**	Go to step 2	Replace the *BTR Assy*
2	***CRU* FAILURE** Replace the *CRU* with a new one. **Is the problem solved?**	Problem solved	Go to step 3
3	**HEAT ROLL DAMAGE** **Do the spots occur at intervals of approximately 104mm?**	Replace the Heat Roll	Go to step 4
4	**PRESSURE ROLL DAMAGE** **Do the spots occur at intervals of approximately 94mm?**	Replace the Pressure Roll Assy	Return to Initial Analysis

5.11 Residual Image



engine fip5009FA

PROBLEM

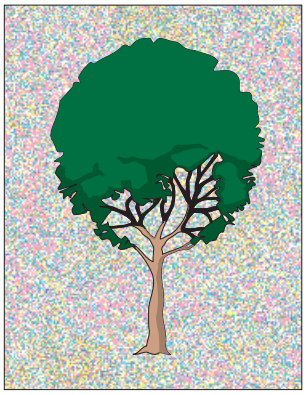
There are ghost images appearing on the page. The images may be either ghosts of the previous page or parts of the page currently being printed.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **Heat Roll**
   - **Fuser Assy**
   - **BTR Assy**
   - **Pressure Roll Assy**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**PAPER CONDITIONS** **Is there moisture in the paper?** **Is the paper wrinkled?**	Replace with fresh, dry paper.	Go to step 2
2	***BTR Assy*** Inspect the *BTR Assy* for contamination. **Is the *BTR* free of contamination?**	Go to step 3	Replace the *BTR Assy*
3	***CRU* FAILURE** Replace the *CRU* with a new one. **Is the problem solved?**	Problem solved	Go to step 4
4	**HEAT ROLL DAMAGE** **Do the images occur at intervals of approximately 62.0mm?**	Go to step 5	Replace the Heat Roll
5	**PRESSURE ROLL DAMAGE** **Do the images occur at intervals of approximately 61.0mm?**	Replace the Pressure Roll Assy	Return to Initial Analysis

5.12 Background



engine fip5010FA

PROBLEM

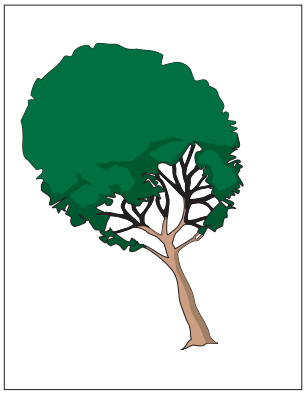
There is toner contamination on all or part of the page. The contamination appears as a very light gray dusting.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **CRU**
   - **Spring Clip**
   - **Harness Assy Conn**
   - **ROS Assy**
   - **HVPS**
   - **PWBA HKB26 MCU**
   - **PWBA HKB PS**
   - **Fuser Assy**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**HVPS CR** Use a sheet of paper to cover the laser beam window. Generate a test print. **Is the problem still present?**	Go to step 2	Go to 6.19 PWBA HVPS Failure
2	***CRU*** Install a new *CRU*. **Is the background still on the page?**	Problem solved	Go to step 3
3	**FUSER GROUND PATH** Inspect the Fuser Ground Path within the Fuser Assy and from the Fuser Assy to the Frame Ground. **Is the Fuser Ground Path functioning correctly?**	Return to Initial Analysis	Re-establish a fuser ground path.

5.13 Skewed Image



engine fip5011FA

PROBLEM

The printed image is not parallel with the sides of the page.

INITIAL ANALYSIS

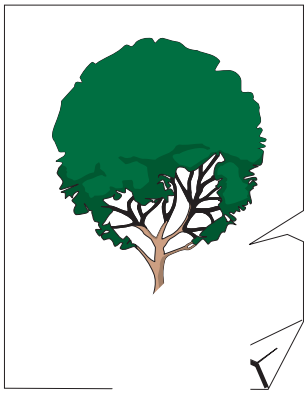
1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- **CRU**
- **BTR Chute Assy**
- **Roll Assy MBF**
- **Cassette Assy**
- **Main Tray**
- **ROS Assy**
- **BTR Assy**
- **P/H Assy**
- **Feeder Assy**
- **Plate Assy Bottom**
- **Retard Pad**

2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**PAPER FEED** **Are the paper cassettes installed correctly, and is the paper correctly loaded into the cassette?**	Go to step 2	Reload the paper and reinstall the cassettes.
2	***CRU*** Install a new *CRU*. **Is the image still skewed?**	Go to step 3	Problem solved
3	**PAPER PATH** Inspect the paper path, between the feed tray and the exit tray, for contamination or obstructions. **Is the paper path free of obstructions?**	Go to step 4	Remove obstructions or contamination from the paper path.
4	**PAPER PATH ROLLS** Inspect the rolls along the paper path, between the feed tray and the exit tray, for contamination, scratches, or damage. **Are the paper path rolls free of contamination, scratches, or damage?**	Return to Initial Analysis	Replace the damaged roll.

5.14 Damaged Prints



engine fip5012FA

PROBLEM

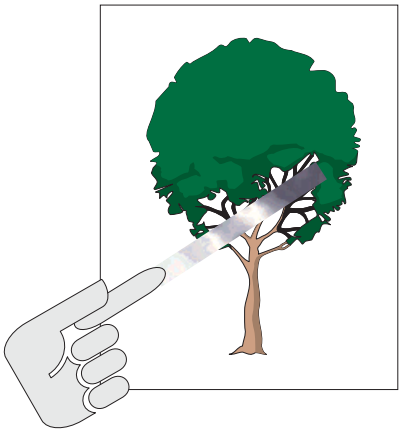
The printed page comes out of the printer either wrinkled, creased, or torn.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
   - **Fuser Assy**
   - **Pressure Roll Assy**
   - **Heat Roll**
2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**PAPER CONDITIONS** **Is there moisture in the paper?** **Is the paper wrinkled?**	Replace with fresh, dry paper.	Go to step 2
2	**HEAT ROLL DAMAGE** Inspect the Heat Roll for scratches, objects, or contamination. **Is the Heat Roll free of scratches and contamination?**	Go to step 3	Replace the Heat Roll
3	**PRESSURE ROLL DAMAGE** Inspect the Pressure Roll for scratches, objects, or contamination. **Is the Heat Roll free of scratches and contamination?**	Go to step 4	Replace the Pressure Roll Assy
4	**SKEWED IMAGE** Inspect the print. **Is the print image skewed?**	Go to 8.13 Skewed Image	Go to step 5
5	**PAPER PATH** Inspect the paper path, between the feed tray and the exit tray, for contamination or obstructions. **Is the paper path free of obstructions?**	Go to step 6	Remove obstructions or contamination from the paper path.
6	**PAPER PATH ROLLS** Inspect the rolls along the paper path, between the feed tray and the exit tray, for contamination, scratches, or damage. **Are the paper path rolls free of contamination, scratches, or damage?**	Return to Initial Analysis	Replace the problem roller Assy

5.15 Unfused Image



engine fip5013FA

PROBLEM

The printed image is not fully fused to the paper. The image easily rubs off.

INITIAL ANALYSIS

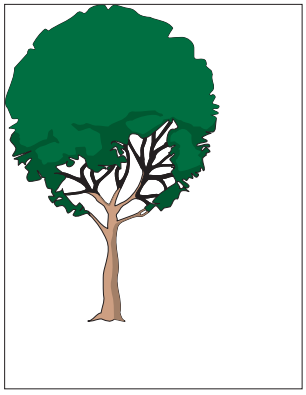
1.Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- **PWBA HKB26 MCU**
- **Heat Roll**
- **PWBA HKB PS**
- **Fuser Assy**
- **Pressure Roll Assy**

2.Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**PAPER CONDITIONS** **Is there moisture in the paper?** **Is the paper wrinkled?**	Replace with fresh, dry paper.	Go to step 2
2	**CAP ENVELOP** Open the Cover Rear. Inspect the Cap Envelop (PL1.2.7). **Is the Cap Envelop (PL1.2.7) set properly?**	Go to step 3	Recover the NIP of the *Fuser Assy*
3	**HEAT ROLL** Inspect the Heat Roll for scratches, objects, or contamination. **Is the Heat Roll free of scratches and contamination?**	Go to step 4	Replace the Heat Roll
4	**PRESSURE ROLL** Inspect the Pressure Roll for scratches, objects, or contamination. **Is the Pressure Roll free of scratches and contamination?**	Go to step 5	Replace the Pressure Roll Assy
5	***FUSER Assy*** Inspect the contact between the Heat and Pressure Rolls. **Are the Heat and Pressure Rolls contacting correctly?**	Return to Initial Analysis	Replace the *Fuser Assy*

5.16 Misregistered Image



engine fip5014FA

PROBLEM

The printed image is not centered on the page or is bleeding off of the page.

INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- **CRU**
- **BTR Chute Assy**
- **Roll Assy MBF**
- **Cassette Assy**
- **Main Tray**
- **ROS Assy**
- **BTR Assy**
- **P/H Assy**
- **Feeder Assy**
- **Plate Assy Bottom**
- **Retard Pad**

2. Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, and paper scrap?

Step	Actions and Questions	Yes	No
1	**PAPER CONDITIONS** **Is there moisture in the paper?** **Is the paper wrinkled?**	Replace with fresh, dry paper.	Go to step 2
2	**SKEWED IMAGE** Inspect the print. **Is the print image skewed?**	Go to 8.13 Skewed Image	Go to step 3
3	**REGISTRATION ADJUSTMENT** Generate a test print. Inspect the print. **Is the test print misregistered?**	Go to step 4	Check the application software printer settings. Replace the *PWB ESS*.
4	**CONFIGURATION MODE** Attach the Diagnostic Commander to the printer and enter Configuration Mode (Appendix B). Check NV codes 03 through 08, and 0D through 0I. **Are the NV codes set at the default values?**	Go to step 5	Set the NV values to the default values, and return to step 3.

5.16 Misregistered Image continued

Step	Actions and Questions	Yes	No
5	**PAPER PATH** Inspect the paper path, between the feed tray and the exit tray, for contamination or obstructions. **Is the paper path free of obstructions?**	Go to step 6	Remove obstructions or contamination from the paper path.
6	**PAPER PATH ROLLS** Inspect the rolls along the paper path, between the feed tray and the exit tray, for contamination, scratches, wear, or damage. **Are the paper path rolls free of contamination, scratches, wear, or damage?**	Return to Initial Analysis	Replace the problem roller Assy

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Blank Page

Secondary FIPs

The 5.2 FIP Flowchart or a Level 1 FIP should have directed you to this section.

Before entering Level 2 FIPs, make sure:

1. Is the printer plugged into a recommended AC wall outlet?
2. Is the AC power provided at the wall outlet within recommended specifications?
3. Is the AC power cord connected to the printer.
4. Is the AC power cord in good condition; not frayed or broken?
5. Is the printer properly grounded through the AC wall outlet?
6. Is the printer located in an area where the temperature and humidity are moderate and stable?
7. Is the printer located in an area that is free of dust?
8. Is the printer located in an area away from water outlets, steamers, electric heaters, volatile gases, or open flames?
9. Is the printer shielded from the direct rays of the sun?
10. Does the printer have recommended space around all sides for proper ventilation?
11. Is the printer sitting on a level and stable surface?
12. Is recommended paper stock being used in the printer?
13. Does the customer use the printer as instructed in the HAKUBA User Manual?
14. Are consumables, such as the CRU, replaced at recommended intervals?

6.1 PWBA HKB PS Failure (+3.3 VDC)

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***PWBA HKB PS*** **(PL10.1.17) ANALYSIS** Switch ON Main Power. Take the following readings within 65 seconds after switching ON Main Power. **Is there +3.3VDC between J282-1 and J282-2?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *PWBA HKB PS* (RRP10.1.9)

6.2 LVPS Failure (+24VDC)

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB PS* (PL10.1.17) • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***PWBA HKB PS*** **(PL10.1.17) ANALYSIS** Switch ON Main Power. Take the following readings within 65 seconds after switching ON Main Power. **Is there +24VDC between P1–1 and P1–2 on the *PWBA HKB PS*?**	Go to step 3	Replace the *PWBA HKB PS* (RRP10.1.9)
3	**S*WITCH ASSY I/L FRONT*** **(PL10.1.12) ANALYSIS** Actuate the *Switch Assy I/L Front*. **Is there +5VDC between P288-1 and P288-2 on the *PWBA HKB 5VDC* (PL10.1.14)?** Deactuate the *Switch Assy I/L Front*. **Is there +0VDC between P288-1 and P288-2 on the *PWBA HKB 5VDC*?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *PWBA HKB 5VDC* (RRP10.1.8)

6.3 ROS Assy Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *PWBA HKB 5VDC* (PL10.1.14) • *ROS Assy* (PL8.1.9) • *Harness Assy ROS (J21-J211, J212, J213)* (PL8.1.7) • *Harness Assy VDO (J22-J223)* (PL8.1.8) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***PWBA HKB PS* (PL10.1.17) ANALYSIS** Switch ON Main Power. **Is there +5VDC between P281-7 and P281-8 on the on the *PWBA HKB 5VDC*?**	Go to step 3	Replace the *PWBA HKB PS* (RRP10.1.9)
3	**ROS MOTOR POWER SUPPLY ANALYSIS** Disconnect P/J21 from the *PWBA HKB26 MCU*. Switch ON Main Power. Determine the print resolution of the printer, and take the corresponding voltage readings between P21-11 and P21-10 on the *PWBA HKB26 MCU*. **Is there +24VDC between P21-11 and P21-10?**	Go to step 4	Replace the *PWBA HKB26 MCU* (RRP10.1.7)
4	**SOS PWB POWER SUPPLY ANALYSIS** **Is there +5VDC between P21-7 and P21-9 on the *PWBA HKB26 MCU*?**	Go to step 5	Replace the *PWBA HKB 5VDC* (RRP10.1.8)
5	Replace the *PWBA HKB26 MCU*. **Is the problem still present?**	Go to step 6	Problem solved
6	***HARNESS ASSY ROS (J21-J211, J212, J213)* (PL8.1.7) ANALYSIS** **Is there continuity (0Ω) between all wires on J21 and J212?** **Is there continuity (0Ω) between all wires on J21 and J211?** **Is there continuity (0Ω) between all wires on J21 and J213?**	Go to step 7	Replace the *Harness Assy ROS (J21-J211, J212, J213)*

6.3 ROS Assy Failure continued

Step	Actions and Questions	Yes	No
7	***HARNESS ASSY VDO (J22-J223)* (PL8.1.8) ANALYSIS** **Is there continuity (0Ω) between all wires on J22 and J223?**	Replace the *ROS Assy* (RRP8.1.5)	Replace the *Harness Assy VDO (J22-J223)*

6.4 Heat Rod Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Fuser Assy* (PL6.1.7) • *Harness Assy Fuser-M (J271, J11, J27, J262)* (PL6.1.12) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *PWBA HVPS* (PL10.1.20) • *ROS Assy* (PL8.1.9) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	**HEAT ROD ANALYSIS** Unplug the AC line from the wall outlet. Disconnect P/J11 on the *PWBA HKB PS*. **Is there continuity between J11-1 and J11-2?**	Go to step 3	Go to step 7
3	***PWBA HKB PS (PL10.1.17)* ANALYSIS** Perform these checks within 70 seconds after Fuser Warm-up has finished. After 70 seconds, the LVPS shuts down. **Is there +3.3VDC between P282-1 and P282-2 on the PWBA HKB PS?**	Go to step 4	Replace the *PWBA HKB PS* (RRP10.1.9)
4	**HEAT ROD ACTUATOR SIGNAL ANALYSIS** Disconnect P/J28 from the *PWBA HKB26 MCU*. Perform these checks when the Fuser Assy has cooled to room temperature. **Is there 0VDC between P28-12 and P28-8 on the *PWB HKB MCU* when you actuate the *Switch Assy I/L Front* (PL10.1.12)?** **Is there +5VDC between P28-12 and P28-8 on the *PWB HKB MCU* when you deactuate the *Switch Assy I/L Front* (PL10.1.12)?**	Replace the *PWBA HKB PS* (RRP10.1.9)	Go to step 5
5	**HEAT ROD TEMPERATURE ANALYSIS** Disconnect P/J27 from the *PWBA HKB26 MCU*. **Is there the continuity between J24-2 and J27-1?**	Go to 6.5 Temperature Sensor Failure	Go to step 6

Table continued

6.4 Heat Rod Failure continued

Step	Actions and Questions	Yes	No
6	**HEAT ROD SIGNAL ANALYSIS** Disconnect J282 from the *HVPS Assy.* Disconnect P/J27 from the *PWB HKB MCU.* Switch ON Main Power. **Does the Heat Rod glow?**	Replace the *ROS Assy* (RRP8.1.5)	Replace the *PWB HKB MCU* (RRP10.1.7)
7	***Harness Assy Fuser-M (J271,J11, J27, J262)*** **(PL6.1.12) ANALYSIS** Disconnect the AC power plug from the back of the printer. Disconnect P/J27, P/J271 and J282. **Is there continuity (0Ω) at the each harness?**	Go to step 8	Replace the *Harness Assy Fuser-M (J271, J11, J27, J262)*
8	**THERMOSTAT AND FUSE ANALYSIS** Remove the Fuser Assembly from the printer. Disassemble the Fuser Assy. **Is there continuity (0Ω) between the two ends of the Thermostat?** **Is there continuity (0Ω) between the two ends of the Plate Fuse?**	Go to 6.3 Error Code U4. If your are unable to determine the problem, replace the *Fuser Assy, PWBA HKB PS,* and the *PWBA HKB26 MCU*.	Replace the Fuser Assy (RRP6.1.3)

6.5 Temperature Sensor Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Fuser Assy* (PL 6.1.7) • *Harness Assy Fuser-M (J271, J11, J27, J262)* (PL6.1.12) • Temperature Sensor Assy • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB LVPS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	**TEMPERATURE SENSOR ANALYSIS** Inspect the Thermistor. **Is the Temperature Sensor damaged, deformed, or contaminated?**	Clean or replace the Temperature Sensor Assy	Go to step 3
3	**TEMPERATURE SENSOR ANALYSIS** Switch OFF printer power. Allow the *Fuser Assy* to cool to room temperature. Check the continuity between J27-1 and J27-2. **Is there approximately 2MΩ between J27-1 and J27-2?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *Fuser Assy* (RRP6.1.3)

6.6 Sensor Exit Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • Sensor Exit in the *Fuser Assy* (PL6.1.7) • *Fuser Assy* (PL6.1.7) • *PWBA HKB26 MCU* (PL10.1.13) • *Harness Assy Fuser-M (J271, J11, J27, J262)* (PL6.1.12) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	**SENSOR EXIT in the *FUSER ASSY* (PL6.1.7) ANALYSIS** Disconnect P/J27 from the *PWBA HKB26 MCU*. Check the voltage between P27-3 and P27-4. **Is there +3.3VDC between P27-3 and P27-4?**	Go to step 3	Replace the *PWBA HKB26 MCU* (RRP10.1.7)
3	**SENSOR EXIT ACTUATING SIGNAL ANALYSIS** Check the voltage between P/J27-4 and P/J27-5. Use a piece of paper to actuate the Sensor Exit. **Is there +0 VDC between P/J27-4 and P/J27-5?** Remove the piece of paper from the Sensor Exit. **Is there +5 VDC between P/J27-4 and P/J27-5?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *Fuser Assy* (RRP6.1.3)

6.7 Sensor Photo:Regi Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *P/H Assy* (PL5.1.4) • *PWBA HKB26 MCU* (PL10.1.13) • *Harness Assy Regi (J43-J431, J423)* (PL5.1.28) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***SENSOR PHOTO:REGI* (PL5.1.12) POWER ANALYSIS** Check the voltage between P/J43-4 and P/J43-3. **Is there +3.3 VDC between P43-4 and P43-3?**	Go to step 3	Go to 6.1 *PWBA HKB PS*Failure (+3.3VDC)
3	***SENSOR PHOTO:REGI* (PL5.1.12) SIGNAL ANALYSIS** Move the *Actuator Regi* (PL2.1.10) by a sheet of paper. Check the voltage between P/J43-5 and P/J43-4. **Does the voltage between P/J43-5 and P/J43-4 fall down from +3.3VDC to 0VDC when the *Actuator Regi* is pushed down by a sheet of paper?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *Sensor Photo:Regi* (RRP5.1.5)

6.8 Sensor Photo:No Pap 1 Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • Sensor Photo:No Pap 1 on the *PWBA Feeder* (PL3.1.36) • *Sensor Photo:Face Control* (PL3.1.13) • *Motor Assy* (PL2.2.22) • *Plate Torque* (PL2.2.11) • *Plate Assy Bottom* (PL2.1.2) • *PWBA Feeder* (PL3.1.36) • *PWBA Size 1* (PL9.1.19) • *Harness Assy Feeder (J33-J331)* (PL9.1.3) • *PWBA HKB26 MCU* (PL10.1.13) • *Harness Assy N/MOT* (PL3.1.39) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	**SENSOR PHOTO:NO PAP 1 ANALYSIS** Remove the Cassette Assy. Check the Voltage between P/J33-2 and P/J33-7 on the *PWBA HKB26 MCU*. **Does the Voltage Fall down From +3.3VDC to 0VDC when the Cassette removed?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Go to step 3
3	***HARNESS ASSY FEEDER (J33-J331)* (PL9.1.13) ANALYSIS** Check the continuity between L331-16 and J33-2, J331-11 and J33-8, and J331-10 and J33-8. **Is there the continuity between L331-16 and J33-2, J331-11 and JJ33-8, and J331-10 and J33-8?**	Go to step 4	Replace the *Harness Assy Feeder (J33-J331)*
4	***PWBA SIZE 1 (PL9.1.19)* ANALYSIS** Check the continuity between P61-5 and P331-16, P61-3 and P331-10, and P61-4 and P331-11. **Is there the continuity between P61-5 and P331-16, P61-3 and P331-10, and P61-4 and P331-11?**	Replace the *PWBA Size 1* (PL9.1.9)	Go to step 5

6.8 Sensor Photo:No Pap 1 Failure continued

Step	Actions and Questions	Yes	No
5	***PWBA FEEDER* (PL3.1.36) ANALYSIS** Check the voltage between P/J61-5 and P/J61-4 falling down from +3.3VDC to 0VDC when the *Actuator N/P* (PL3.1.6) shields the sensing point of the Sensor Photo. **Does the voltage between P/J61-5 and P/J65-4 fall down to 0VDC?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *PWBA Feeder* (PL3.1.36)

6.9 Sensor Photo:Exit Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • Sensor Photo:Exit in the *Fuser Assy* • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	**SENSOR PHOTO:EXIT ANALYSIS** Disconnect P/J 27 from the *PWBA HKB26 MCU*. **Is there +3.3VDC between P27-3 and P27-4?**	Go to step 3	Go to 6.1 *PWBA HKB PS* Failure (+3.3VDC)
3	**SENSOR PHOTO:EXIT SIGNAL ANALYSIS** Check the voltage between P/J27-3 and P/J27-2 when you push up and release the Actuator Exit with inserting and removing a sheet of paper at the *Fuser Assy.* **Is there 0VDC when pushing up the Actuator Exit and +5VDC when releasing it?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *Fuser Assy* (RRP6.1.3)

6.10 Sensor Assy CRU Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Sensor Assy CRU* (PL8.1.6) • *PWBA HKB PS* (PL10.1.17) • *CRU* (PL8.1.1) • *PWBA HKB26 MCU* (PL10.1.13) • *Harness Assy CRU SNS (J25-J251)* (PL8.1.2) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***CRU (PL8.1.1)* ANALYSIS** **Does the tab on the *CRU* actuate the *Sensor Assy CRU*?**	Go to step 3	Replace the *CRU*
3	***SENSOR ASSY CRU* (PL8.1.6) ANALYSIS** Disconnect P/J25 on the *PWBA HKB26 MCU*. Cheat the *Switch Assy I/L Front* (PL10.1.12). Remove the *CRU*. **Is there some amount of resistance measured between J25-2 and J25-1?** Reinstall the *CRU*. **Is there continuity (0Ω) between J25-2 and J25-1?**	Go to step 4	Replace the *Sensor Assy CRU* (RRP8.1.4)
4	***Harness Assy FS SNR (J30-J301)* (PL7.1.16) ANALYSIS** **Is there continuity (0Ω) between all wires on J30 and J301?**	Go to 6.1 *PWBA HKB PS* Failure (+5VDC)	Replace the *Harness Assy FS SNR (J30--J301)*

6.11 Drive Components Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Motor Assy Main* (PL8.1.14) • *Gear Assy Drive* (PL8.1.13) • *Feeder Assy* (PL3.1.19) • *Roll Assy Turn* (PL3.1.1) • *Roll Assy MBF* (PL4.1.2) • *P/H Assy* (PL5.1.4) • *BTR Chute Assy* (PL6.1.1) • *Fuser Assy* (PL6.1.7) • *Roll Assy Mid-1* (PL7.1.7) • *Roll Assy Mid-2* (PL7.1.11) • *Roll Pinch* (PL7.1.12) • *Roll Pinch Exit* (PL7.1.9) • *PWBA HKB PS* (PL10.1.17) • *PWBA HKB26 MCU* (PL10.1.13) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***GEAR ASSY DRIVE* (PL8.1.13) and *MOTOR ASSY MAIN* (PL8.1.14) ANALYSIS** Remove the *CRU*. Remove the *Fuser Assy* (RRP9.1.1). Cheat the *Switch Assy I/L Front*. Use MAIN MOTOR TEST to check the rotation of *Gear Assy Drive*. **Do the *Motor Assy Main* and all of the *Gear Assy Drive* rotate smoothly?**	Go to step 5	Go to step 3
3	***MOTOR ASSY MAIN* (PL8.1.14) ANALYSIS** Remove the Motor Assy Main remaining the connection of harness assy. Use MAIN MOTOR TEST to check the rotation of *Gear Assy Drive*. **Do the *Motor Assy Main* rotate smoothly?**	Go to step 4	Replace the *Motor Assy Main* (RRP8.1.7)

6.11 Drive Components Failure continued

Step	Actions and Questions	Yes	No
4	***GEAR ASSY DRIVE* (PL8.1.13) ANALYSIS** Remove the Gear Assy Drive (RRP8.1.6). Rotate the gear of the *Gear Assy Drive*. **Do the *Gear Assy Drive* rotate smoothly?**	Go to step 5	Replace the *Gear Assy Drive* (RRP8.1.6)
5	***ROLL REGI METAL* and *ROLL REGI RUBBER* ANALYSIS** Open the *Cover Assy Front* (PL1.1.9). Rotate the *Roll Assy Metal* clockwise by manual. **Do the *Roll Regi Metal* and *Roll Regi Rubber* rotate smoothly?**	Go to step 6	Replace the *P/H Assy* (RRP5.1.1)
6	***ROLL ASSY MBF* (PL4.1.1) ANALYSIS** Open the *Cover Assy Front*. Actuate the *Solenoid Pick Up* Using SOLENOID MBF TEST. Rotate the *Roll Assy MBF* counterclockwise by manual. **Do the *Roll Assy MBF* rotate smoothly?**	Go to step 7	Replace the *Roll Assy MBF* (RRP4.1.2)
7	***FEEDER ASSY* (PL3.1.19) ANALYSIS** Remove the *Cassette Assy.* Rotate the *Roll Assy* of the *Feeder Assy* counterclockwise by manual. **Do the *Feeder Assy* rotate smoothly?**	Go to step 8	Replace the *Feeder Assy*
8	**R*OLL ASSY TURN* (PL3.1.1) ANALYSIS** Open the *Cover Assy Front*. Rotate the *Roll Assy Turn* clock wisely by manual. **Do the *Roll Assy Turn* rotate smoothly?**	Go to step 9	Replace the *Roll Assy Turn*
9	***CRU* (PL8.1.1) ANALYSIS** Remove the *CRU*. Rotate the Drum Gear clockwise by manual. **Does the *Drum Gear* rotate smoothly?**	Go to step 10	Replace the *CRU*
10	***FUSER ASSY* (PL6.1.7) ANALYSIS** Remove the *Fuser Assy*. Rotate the Heat Roll Gear clockwise by manual. **Do all of the gears rotate smoothly?**	Go to step 11	Replace the *Fuser Assy* (RRP6.1.3)

6.11 Drive Components Failure continued

Step	Actions and Questions	Yes	No
11	**Install a new *PWBA HKB26 MCU*.** **Is the problem still present?**	Go to 6.13 Solenoid Pick Up Failure, 6.14 Clutch Assy Feed Failure, 6.15 Clutch Assy Turn Failure or 6.18 Exit Failure	Problem solved

6.12 Paper Size Sensor Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Cassette Assy* (PL2.1.1) • *Switch Size on the PWBA Size 1* (PL9.1.19) • *PWBA MCU PWB* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***ACTUATOR CST* (PL2.1.19) ANALYSIS** Remove the *Cassette Assy* from the printer. Press and release each *Actuator for CST*. **Does each *Actuator CST* move smoothly?**	Go to step 3	Replace the *Cassette Assy*
3	***SWITCH SIZE* on the *PWBA SIZE 1* ANALYSIS** Use SENSOR/SWITCH CHECK to check the *Switch Size*. Push and release the *Cam SW* (PL9.1.15) respectively by manual and observe the increment of the SENSOR CHECK counter. **Does the counter increment followed by the push and release of the *Cam SW*?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *PWBA Size 1*

6.13 Solenoid Pick Up Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Solenoid Pick Up* (PL4.1.23) • *Gear Pick Up* (PL4.1.25) • *Spring MSI 300* (PL4.1.24) • *Roll Assy MBF* (PL4.1.6) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***SOLENOID PICK UP* (PL4.1.23) ANALYSIS** Use SOLENOID MBF TEST to check the function. **Is the function of the *Solenoid Pick Up* normal?**	Go to step 3	Go to step 4
3	**Does the error still occur?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Problem solved
4	***SOLENOID PICK UP* (PL4.1.23) POWER ANALYSIS** Check the voltage between P/J44-1 and P/J44-2 when use SOLENOID MBF TEST. **Is there +24VDC when the Solenoid MBF Test?**	Replace the *Solenoid Pick Up*	Go to 6.2 *PWBA HKB PS* Failure (+24V)

6.14 Clutch Assy Feed Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Clutch Assy Feed* (PL3.1.37) • *Feeder Assy* (PL3.1.19) • *Cassette Assy* • *PWBA Size 1* (PL9.1.19) • *PWBA Feeder* (PL3.1.36) • *Harness Assy Feeder (J33-J331)* (PL9.1.13) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***CLUTCH ASSY FEED* (PL3.1.37) ANALYSIS** Use FEED CLUTCH TEST to check the function. **Is the function of the *Clutch Assy Feed* normal?**	Go to step 3	Go to step 4
3	**Does the error still occur?**	Go to step 5	Problem solved
4	***CLUTCH ASSY FEED* (PL3.1.37) POWER ANALYSIS** Check the voltage between P/J651-1 and P/J651-4 when use FEED CLUTCH TEST. **Is there +24VDC when the FEED CLUTCH TEST?**	Replace the *Clutch Assy Feed*	Go to 6.2 *PWBA HKB PS* Failure (+24V)

6.15 Turn Solenoid Assembly Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Clutch Assy Turn* (PL3.1.2) • *Roll Assy Turn* (PL3.1.1) • *Cassette Assy* • *PWBA Size 1* (PL9.1.19) • *PWBA Feeder* (PL3.1.36) • *Harness Assy Feeder (J33-J331)* (PL9.1.13) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***CLUTCH ASSY TURN* (PL3.1.2) ANALYSIS** Use TURN CLUTCH TEST to check the function. **Is the function of the *Clutch Assy Turn* normal?**	Go to step 3	Go to step 4
3	**Does the error still occur?**	Go to step 5	Problem solved
4	***CLUTCH ASSY TURN* (PL3.1.2) POWER ANALYSIS** Check the voltage between P/J641-1 and P/J641-4 when use TURN CLUTCH TEST. **Is there +24VDC when the TURN CLUTCH TEST?**	Replace the *Clutch Assy Turn*	Go to 6.2 *PWBA HKB PS* Failure (+24V)

6.16 Fan Assy Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Fan Assy* (PL9.1.7) • *Harness Assy LVPS (J28-J281)* (PL10.1.5) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***FAN ASSY* (PL9.1.7) POWER ANALYSIS** Check the voltage between P/J283-1 and P/J283-3 when the Main Power is On. **Is there +24VDC between P/J283-1 and P/J283-3?**	Go to step 3	Go to 6.2 *PWBA HKB PS* Failure (+24V)
3	**FAN ACTUATING SIGNAL ANALYSIS** Disconnect P/J26 from the *PWBA HKB26 MCU*. Use FAN TEST to check the Fan operation. Check the voltage between P26-13 and P26-8. **Is there +3.3VDC between P26-13 and P26-8?**	Replace the *Fan Assy* (RRP9.1.1)	Replace the *PWBA HKB26 MCU* (RRP10.1.7)

6.17 Toner Sensor Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Toner Sensor* (PL5.1.1) • *Holder Toner Sensor* (PL5.1.2) • *Cushion TSN* (PL5.1.33) • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HKB PS* (PL10.1.17) • *Harness Assy Toner Sensor (J42-J421)* (PL5.1.32) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***TONER SENSOR* (PL5.1.1) ANALYSIS** Disconnect P/J42 from the *PWBA Conn* (PL10.1.11). Check the voltage between P42-3 and P42-1. **Is there +24VDC between P42-3 and P42-1?**	Go to step 3	Go to 6.2 *PWBA HKB PS* Failure (+24VDC)
3	***TONER SENSOR* ACTUATING SIGNAL ANALYSIS** Disconnect P/J42 from the *PWBA Conn* (PL10.1.11). Check the voltage between P42-4 and frame ground. **Is there +3.3VDC between P42-4 and frame ground?**	Go to step 6	Go to step 4
4	***HARNESS ASSY TONER SENSOR (J42-J421)* (PL5.1.32) ANALYSIS** **Is there continuity (0Ω) between all wires on J42 and J421?**	Go to Step 5	Replace the *Harness Assy Toner Sensor*
5	***PWBA CONN* (PL10.1.11) ANALYSIS** Check the continuity between P42-4 and P231-9, P42-3 and P231-11, and P42-1 and P231-12. **Is there continuity (0Ω)?**	Go to 6.2 *PWBA HKB PS* Failure (+24VDC)	Replace the *PWBA Conn* (RRP10.1.5)

6.18 Exit Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *Motor Assy Exit* (PL7.1.21) • *Harness Assy LVPS (J28-J281)* (PL10.1.15) • *PWBA HKB PS* (PL10.1.17) • *PWBA HKB26 MCU* (PL10.1.13) • *Roll Assy Mid-1* (PL7.1.7) • *Roll Assy Mid-2* (PL 7.1.11) • *Roll Pinch Exit* (PL7.1.9) • *Roll Pinch* (PL7.1.12) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***MOTOR ASSY EXIT* (PL7.1.21) ANALYSIS** Check the voltage between P/J32–1 frame ground. **Is there +24VDC between P/J32–1 and frame ground?**	Go to step 3	Go to 5.2 *PWBA HKB PS* Failure (+24VDC)
3	***HARNESS ASSY LVPS* (J28-J281) ANALYSIS** **Is there continuity (0Ω) between all wires on J28 and J281?**	Go to step 4	Replace the *Harness Assy LVPS*
4	***MOTOR ASSY EXIT* (PL7.1.21) ANALYSIS** **Is there continuity between:** **P/J25–1 and P/J25–2?** **P/J25–1 and P/J25–3?** **P/J25–1 and P/J25–4?** **P/J25–1 and P/J25–5?**	Go to step 5	Replace the *Motor Assy EXIT* (RRP7.1.6)
5	***ROLL ASSY MID-1* and *MID-2* ANALYSIS** Rotate the *Roll Assy Mid-1* and *Mid-2* manually. **Do both Rolls rotate smoothly?**	Go to step 6	Replace the gears and Rolls
6	***MOTOR ASSY EXIT* ANALYSIS** Rotate the *Motor Assy Exit* manually. **Does the *Motor Assy Exit* rotate smoothly?**	Replace the *PWBA HKB26 MCU* (RRP10.1.7)	Replace the *Motor Assy EXIT* (RRP7.1.6)

6.19 PWBA HVPS Failure

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HVPS* (PL10.1.20) • *Harness Assy HVPS (J26-J261)* (PL10.1.19) • *PWBA HKB PS* (PL10.1.17) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	***PWBA HVPS* (PL10.1.20) ANALYSIS** Disconnect P/J26 from the *PWBA HKB26 MCU*. Check the voltage between P26-2 and P26-3. **Is there +24 VDC between P26-2 and P26-3?**	Go to step 3	Go to 6.2 *PWBA HKB PS* Failure (+24VDC)
3	***PWBA HVPS* (PL10.1.20) ANALYSIS** Disconnect P/J26 from the *PWBA HKB26 MCU*. Check the voltage between P26-4 and P26-5. **Is there +3.3VDC between P26-4 and P26-5?**	Go to step 4	Go to 6.1 *PWBA HKB PS* Failure (+3.3VDC)
4	***HARNESS ASSY HVPS (J26-J261)* (PL10.1.19) ANALYSIS** **Is there continuity (0Ω) between all wires on J26 and J261?**	Go to step 5	Replace the *PWBA HVPS* (RRP10.1.11)
5	**Install a new MCU PWB.** **Is the problem still present?**	Replace the *PWBA HVPS* (RRP10.1.11)	Problem solved

6.20 Electrical Noise

Step	Actions and Questions	Yes	No
1	**INITIAL ANALYSIS** Inspect the following components. • *PWBA HKB26 MCU* (PL10.1.13) • *PWBA HVPS* (PL10.1.20) • *Fuser Assy* (PL6.1.7) • Heat Rod • *Harness Assy Fuser -M (J271,J11, J27, J262)* (PL6.1.12) • *PWBA HKB PS* (PL10.1.17) • *CRU* • *P/H Assy* (PL5.1.4) • *Resist Buffle* (PL5.1.25) • *BTR Chute Assy* (PL6.1.1) • *Spring Earth Exit* (PL7.1.24) • *Chute Assy MBF* (PL4.1.1) • *Cover Assy Front* (PL1.1.9) **Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?**	Go to step 2	Replace the problem components
2	Check the AC power cord and the AC wall outlet. **Is the printer properly grounded?**	Go to step 3	Ground the printer
3	Check the area around the printer. **Is there an electrical device, such as a generator or an appliance, near the printer.**	Move the device, or relocated the printer.	Go to step 4
4	***P/H ASSY* (PL5.1.4) ANALYSIS** Check to make sure the *Springs Earth* are firmly attached to the *P/H Assy*. **Are the *Springs Earth* firmly attached to the *P/H Assy*?**	Go to step 5	Re-secure the *Spring Earth*

6.20 Electrical Noise continued

Step	Actions and Questions	Yes	No
5	***SPRING EARTH EXIT* (PL7.1.24) ANALYSIS** Check to make sure the *Spring Earth Exit* is firmly attached to the *Chute Exit*: **Are the *Spring Chute Exit* firmly attached to the *Chute Exit*?**	Go to step 6	Re-secure the *Spring Chute Exit*
6	***HARNESS ASSY FUSER -M (J271, J11, J27, J262)* (PL6.1.12) ANALYSIS** **Is there continuity (0Ω) between J27–1 and J271-5, and J27-3 and J271-3?**	Go to step 7	Replace the *Harness Assy Fuser-M (J271, J11, J27, J262)*
7	***FUSER ASSY* (PL6.1.7) ANALYSIS** Remove the Fuser Top Cover and Left Cover. **Is there continuity (0Ω) between the Heat Roll and the Nip Lever L?**	Go to step 8	Reinstall the components to establish continuity
8	***CRU* ANALYSIS** Install a new *CRU*. **Is the noise still present?**	Go to step 9	Problem solved
9	Inspect the machine ground path. **Is there continuity (0Ω) along the entire printer ground path?**	Go to step 10	Repair the ground path
10	Try the initial analysis again. **Is there a faulty component?**	Replace the component	Look for an external device causing the noise

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Section 8 - Diagnostic Mode Contents

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1.5 Diagnostic Mode

1.5.1 General Description of Diagnostic Mode

The Diagnostic Mode has the following functions:

- Output Test
- Input Test
- Alignment
- Maintenance Information
- Operator Panel
- Test Print
- Flash Summary
- Print Summary

1.5.2 Entering the Diagnostic Mode Menu

1. Switch the printer power off.
2. Simultaneously press and hold the “Menu” and “Select” buttons.
3. Switch the printer power on.
4. When “Initializing” is displayed, release the “Menu” and “Select” buttons.
5. After a few seconds, Diagnostics will be displayed.
6. To exit Diagnostic Mode Menu and return to Ready, repeatability press Return or Cancel until Ready is displayed.

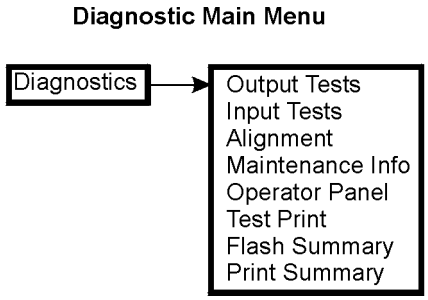
1.5.3 Navigating through the Diagnostic Menus

Four buttons are used to navigate through the diagnostic menus, Next, Previous, Select, and Return. From the initial menu selection “Output Tests” (see 1.5.1), pressing Next moves down the menu to “Input Test” then to “alignment” and so on. Pressing Previous moves up through the menu. With the desired menu displayed, pressing “Select” activates that menu. Pressing “Next” and “Previous” moves down and up through the selected sub-menu. Pressing “Select” will activate the displayed menu item. Pressing “Return” moves back to the next higher menu. See 1.5.4 for an illustration of all the menus and sub-menus.

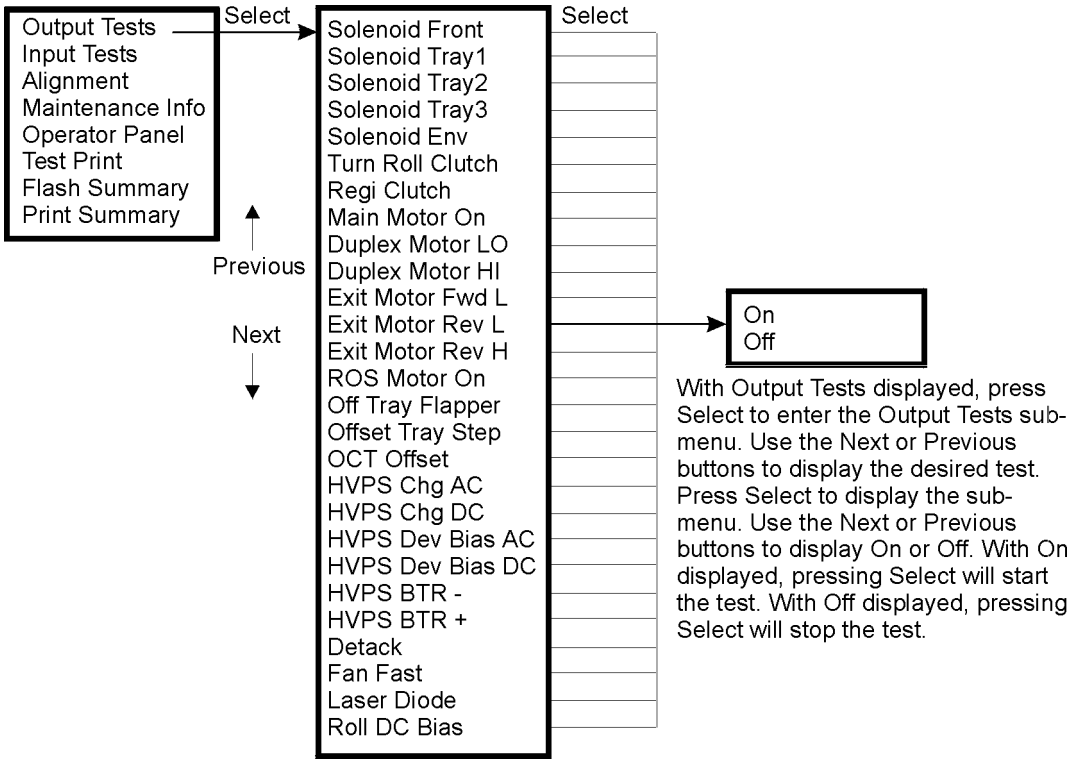
1.5.4 Graphic illustration of the Diagnostic Menus

1.5.4.1 Diagnostic Main Menu

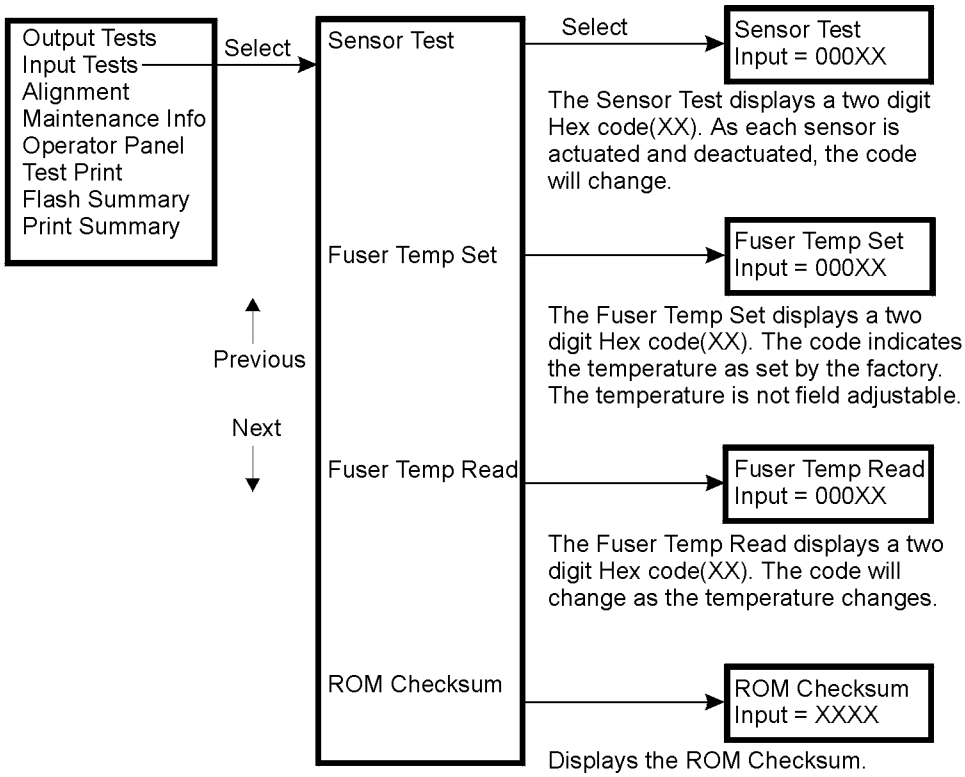
Press “Next” or “Previous” to scroll down or up through the menu items. Press “Select” to activate the displayed menu items’ sub-menu or to run the selected menu item. Press “Return” or “Cancel” to exit the test or to move up one level in the menu structure.



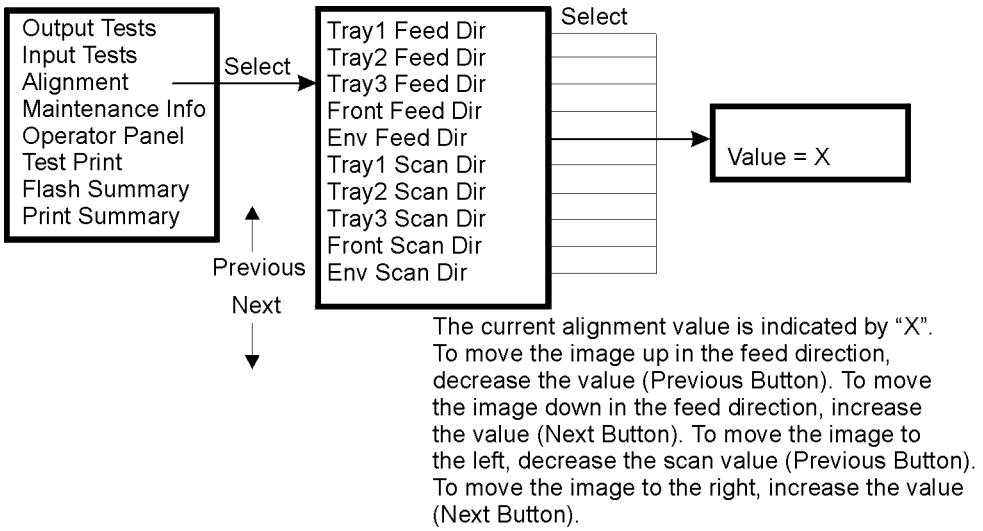
1.5.4.2 Output Tests (see 1.5.5)



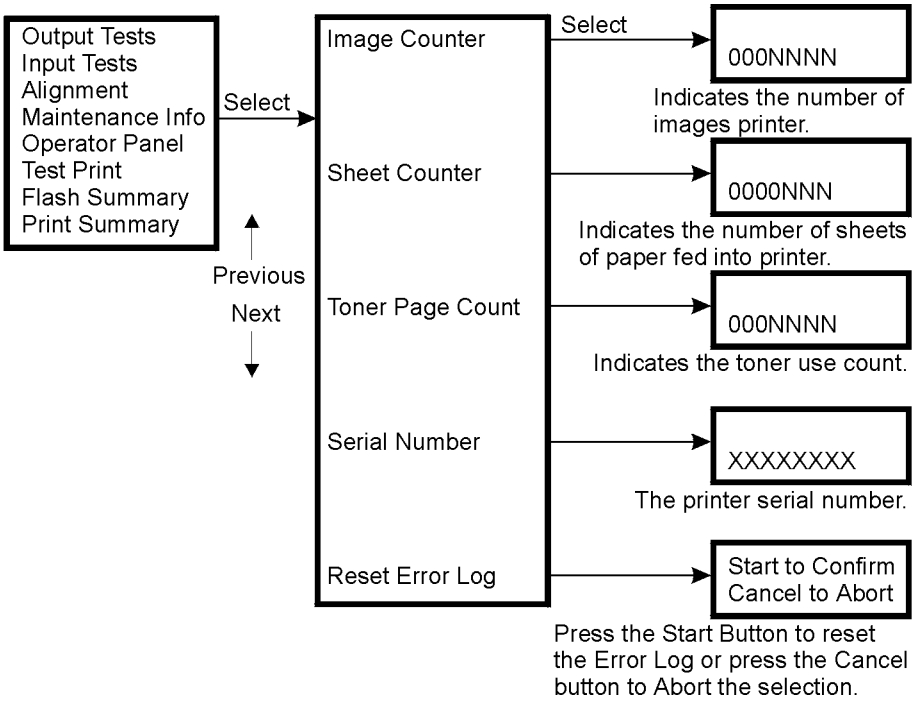
1.5.4.3 Input Tests (see 1.5.6)


Output Tests
Input Tests
Alignment
Maintenance Info
Operator Panel
Test Print
Flash Summary
Print Summary
Select
Sensor Test
Fuser Temp Set
Fuser Temp Read
ROM Checksum
Previous
Next
Select
Sensor Test
Input = 000XX
The Sensor Test displays a two digit Hex code(XX). As each sensor is actuated and deactuated, the code will change.
Fuser Temp Set
Input = 000XX
The Fuser Temp Set displays a two digit Hex code(XX). The code indicates the temperature as set by the factory. The temperature is not field adjustable.
Fuser Temp Read
Input = 000XX
The Fuser Temp Read displays a two digit Hex code(XX). The code will change as the temperature changes.
ROM Checksum
Input = XXXX
Displays the ROM Checksum.

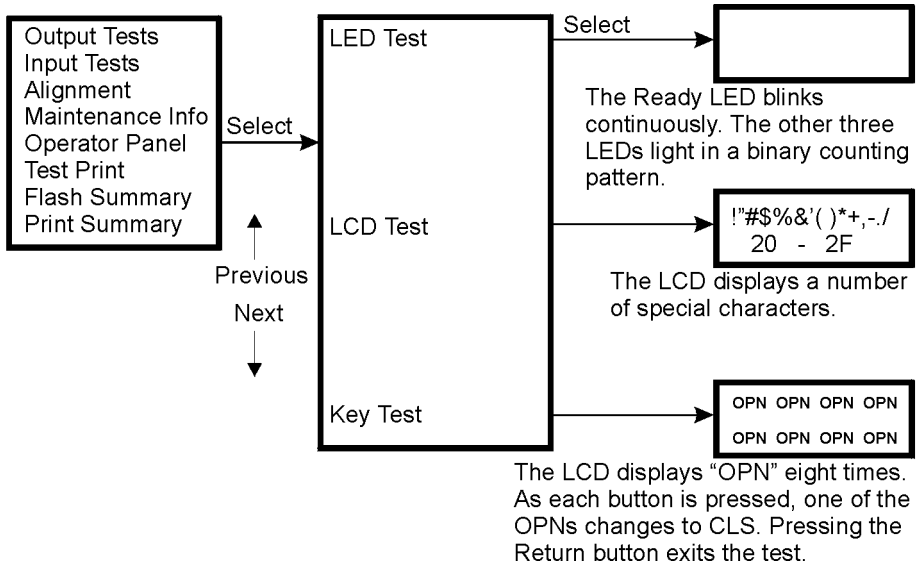
1.5.4.4 Alignment (see 1.5.7)


Output Tests
Input Tests
Alignment
Maintenance Info
Operator Panel
Test Print
Flash Summary
Print Summary
Select
Previous
Next
Tray1 Feed Dir
Tray2 Feed Dir
Tray3 Feed Dir
Front Feed Dir
Env Feed Dir
Tray1 Scan Dir
Tray2 Scan Dir
Tray3 Scan Dir
Front Scan Dir
Env Scan Dir
Select
Value = X
The current alignment value is indicated by “X”. To move the image up in the feed direction, decrease the value (Previous Button). To move the image down in the feed direction, increase the value (Next Button). To move the image to the left, decrease the scan value (Previous Button). To move the image to the right, increase the value (Next Button).

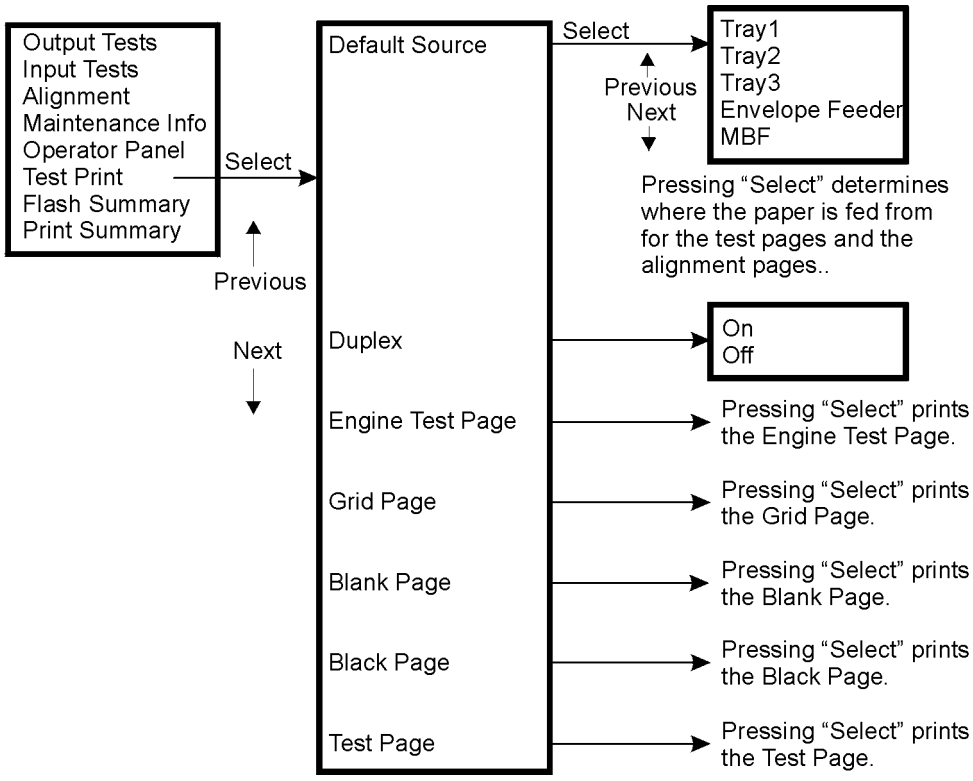
1.5.4.5 Maintenance Info (see 1.5.8)



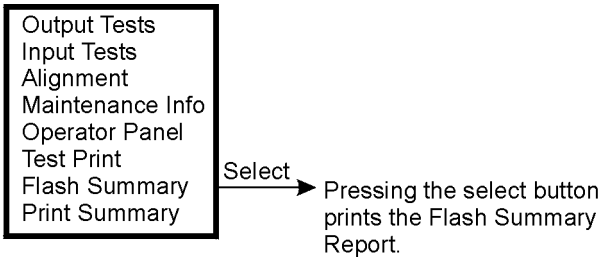
1.5.4.6 Operator Panel (see 1.5.9)



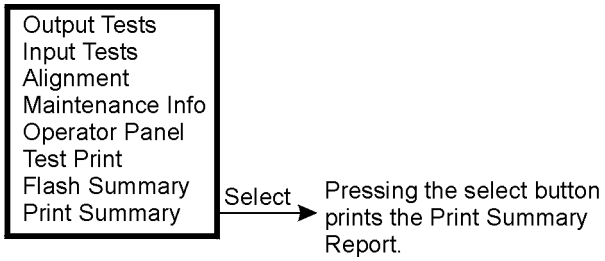
1.5.4.7 Test Print (see 1.5.10)



1.5.4.8 Flash Summary (see 1.5.11)



1.5.4.9 Print Summary (see 1.5.12)



1.5.5 Output Tests

Using the output tests you can run motors, energize solenoids and clutches, switch on and off individual outputs from the high voltage power supply (HVPS), and check the Laser (ROS) motor.

To enter the Output Tests menu see Entering Diagnostics (1.5.2) and Navigating Through Diagnostics (1.5.3).

In all the tests listed below (Table 1), if the component being tested responds as indicated. then the circuit wiring to and the component itself are usually good. The problem is most likely the controlling circuit board or the mechanical components being driven by the tested component.

To make the voltage tests listed in Table 1, open the front cover and remove the drum cartridge. Cheat the front cover interlock. Initiate the desired test and make the voltage reading between the component and frame ground.

Do not touch the power supply unit while the power is connected. The POWER switch/inlet section may be charged even if the POWER switch is turned off.

Table 1. Output Tests

Test	Component Tested	Notes
Solenoid Front	MBF Feed Solenoid	When ON is selected, you should hear the solenoid energize.
Solenoid Tray1	Tray 1 Feed Solenoid	When ON is selected, you should hear the solenoid energize.
Solenoid Tray2	Tray 2 Feed Solenoid	When ON is selected, you should hear the solenoid energize.
Solenoid Tray3	Tray 3 Feed Solenoid	When ON is selected, you should hear the solenoid energize.
Solenoid Env	Envelope Feed Solenoid	When ON is selected, you should hear the solenoid energize.
Turn Roll Clutch	Turn Roll Clutch	When ON is selected, you should hear the clutch energize.
Regi Clutch	Registration Clutch	When ON is selected, you should hear the clutch energize.
Duplex Motor LO	Duplex Motor low speed	When ON is selected, you should hear the Duplex Motor run at low speed.
Duplex Motor HI	Duplex Motor high speed	When ON is selected, you should hear the Duplex Motor run at high speed.
Exit Motor Fwd L	Exit Motor forward at low speed	When ON is selected, you will see the Exit Motor run forward at low speed.
Exit Motor Rev L	Exit Motor reverse at low speed	When ON is selected, you will see the Exit Motor run reverse at low speed.

Table 1. Output Tests

Test	Component Tested	Notes
Exit Motor Rev H	Exit Motor reverse at high speed	When ON is selected, you will see the Exit Motor run reverse at high speed.
ROS motor On	ROS Motor On	When ON is selected, you should hear the ROS Motor spin up.
Off Tray Flapper	Offset Tray flapper	When ON is selected, the Offset Tray flapper roll rotates.
Offset Tray Step	Offset tray stepper motor	When ON is selected, the Offset Tray stepper motor rotates.
OCT Offset	OCT offset motor	When ON is selected, the offset shaft shifts right then returns.
HVPS Chg AC	AC charge voltage	When ON is selected, the AC charge voltage is switched on. 1000 +/- 100 VAC (see note below)
HVPS Chg DC	DC charge voltage	When ON is selected, the DC charge voltage is switched on. -425 +/- 40 VDC (see note below)
HVPS Dev Bias AC	AC developer bias	When ON is selected, the AC developer bias voltage is switched on. 690 +/- 60 VAC (see note below)
HVPS Dev Bias DC	DC developer bias	When ON is selected, the DC developer bias voltage is switched on. 7 +/- 4 VDC (see note below)
HVPS BTR -	Negative DC BTR voltage	When ON is selected, the negative DC BTR voltage is switched on. -81 +/- 8 VDC (see note below)
HVPS BTR +	Positive DC BTR voltage	When ON is selected, the positive DC BTR voltage is switched on. 340 +/- 30 VDC (see note below)
Detack	Detack voltage	When ON is selected, the detack voltage is switched on. -930 +/- 100 VDC (see note below)
Fan Fast	Fan rotates at fast speed	When ON is selected, the fan rotates at fast speed
Laser Diode	Laser diode activated	When ON is selected, the Laser diode is switched on.
Roll DC Bias	DC bias voltage	When ON is selected, the DC bias voltage is switched on.

NOTE

·Exact output voltage readings cannot be confirmed with this diagnostic test, because of the HVPS design, and also variable types of multimeter.

1.5.6 Input Tests

The input tests allow you to test the sensors and switches located in the printer, display fuser temperature activity in a Hex code, and display the ROM checksum.

To enter the Input Tests menu see Entering Diagnostics (1.5.2) and Navigating Through Diagnostics (1.5.3).

The Sensor Test displays three zeros and a two digit Hex code. Each time a sensor is actuated or de-actuated, the two digit Hex code changes.

The Fuser Temp Set and Fuser Temp Read are for checking fuser temperature activity only. You cannot set the fuser temperature.

ROM Checksum displays the ROM Checksum.

Table 2. Input Tests

Test	Component Tested	Notes
Sensor Test	All sensors and switches	The two digit Hex code changes with each actuation and de-actuation of a sensor or switch.
Fuser Temp Set	Current fuser factory setting	Displays a two digit Hex code that indicates the fuser temperature set by the factory. This number can be used when escalating a fuser problem. The fuser temperature is not field adjustable.
Fuser Temp Read	Current fuser temperature	Displays a two digit Hex code that indicates the fuser temperature. As the fuser operates at all times in a certain temperature range (heating and cooling), a temperature variation, indicated by a constantly changing Hex code, is not a sign of trouble.
ROM Checksum	ROM Checksum	Displays the ROM checksum.

1.5.7 Alignment

The Alignment Menu enables you to adjust the registration of the image to the paper. The image can be adjusted from top to bottom (direction of paper travel) and from side to side (scan direction). You can adjust each paper source separately.

Complete instructions for performing registration alignment are contained in section 9.

Table 3. Alignment Menu

Test	Component Adjusted	Notes
Tray1 Feed Dir	Tray 1 in the feed direction	Adjusts the timing between the stock being fed from tray one and the image on the photoreceptor.
Tray2 Feed Dir	Tray 2 in the feed direction	Adjusts the timing between the stock being fed from tray two and the image on the photoreceptor.
Tray3 Feed Dir	Tray 3 in the feed direction	Adjusts the timing between the stock being fed from tray three and the image on the photoreceptor.
Front Feed Dir	MBF in the feed direction	Adjusts the timing between the stock being fed from the multisheet bypass feeder and the image on the photoreceptor.
Env Feed Dir	Envelopes in the feed direction	Adjusts the timing between the stock being fed from the envelope feeder and the image on the photoreceptor.
Tray1 Scan Dir	Tray 1 in the scan direction	Adjusts the image start of scan position on the photoreceptor to match the stock being fed from tray one.
Tray2 Scan Dir	Tray 2 in the scan direction	Adjusts the image start of scan position on the photoreceptor to match the stock being fed from tray two.
Tray3 Scan Dir	Tray 3 in the scan direction	Adjusts the image start of scan position on the photoreceptor to match the stock being fed from tray three.
Front Scan Dir	MBF in the scan direction	Adjusts the image start of scan position on the photoreceptor to match the stock being fed from the multisheet bypass feeder.
Env Scan Dir	Envelopes in the scan direction	Adjusts the image start of scan position on the photoreceptor to match the stock being fed from the envelope feeder.

1.5.8 Maintenance Info

The Maintenance Info menu displays information that is contained on the MCU PWB. This information is used to determine if the drum cartridge is nearing end-of-life, feed roll change interval, machine serial number, and to clear the error log,

Since this information is contained on the MCU PWB, if the MCU PWB is replaced, all information is lost.

Table 4. Maintenance Information

Test	Display	Function
Image Counter	0000NNN	When Select is pressed, the count is displayed. This test counts the number of images created. If running double sided prints, the image counter will count twice for a single sheet of paper.
Sheet Counter	0000NNN	When Select is pressed, the count is displayed. The internal counter counts up every FEED signal. The counter counts up even if the paper jammed.
Toner Page Count	0000NNN	When Select is pressed, the count is displayed. This test counts the number of toner page prints.
Serial Number	XXXXXXXXXX	When Select is pressed, the serial is displayed.
Reset Error Log	Start to Confirm Cancel to abort	After Select is pressed, you can press Start to reset (clear) the error log or press cancel to abort the selection.

1.5.9 Operator Panel

The Operator Menu allows you to test all three input/output components of the control panel. You can test the LCD, LEDs, and the Button switches.

Table 5. Operator Panel

Test	Display	Function
LED Test	LED Test	When Select is pressed, The Ready LED blinks at a constant speed. The Active LED lights and goes out. Then the Power LED lights and goes out. Then both the Active and Power LEDs light and go out. The Fault LED lights and goes out. Then the Active and Fault, then the Power and Fault, and then all three LEDs light. The sequence repeats until the test is stopped.
LCD Test	! " # $ % & ' ( ) * + , - . / 20 - 2F	When Select is pressed, the special characters at the left are displayed.
Key Test	OPN OPN OPN OPN OPN OPN OPN OPN	When Select is pressed, the LCD displays eight OPNs. Each one represents one the buttons on the key pad. When you press one of the keys, OPN changes to CLS for that key. Pressing the Return key ends the test and returns to the Operator Panel menu.

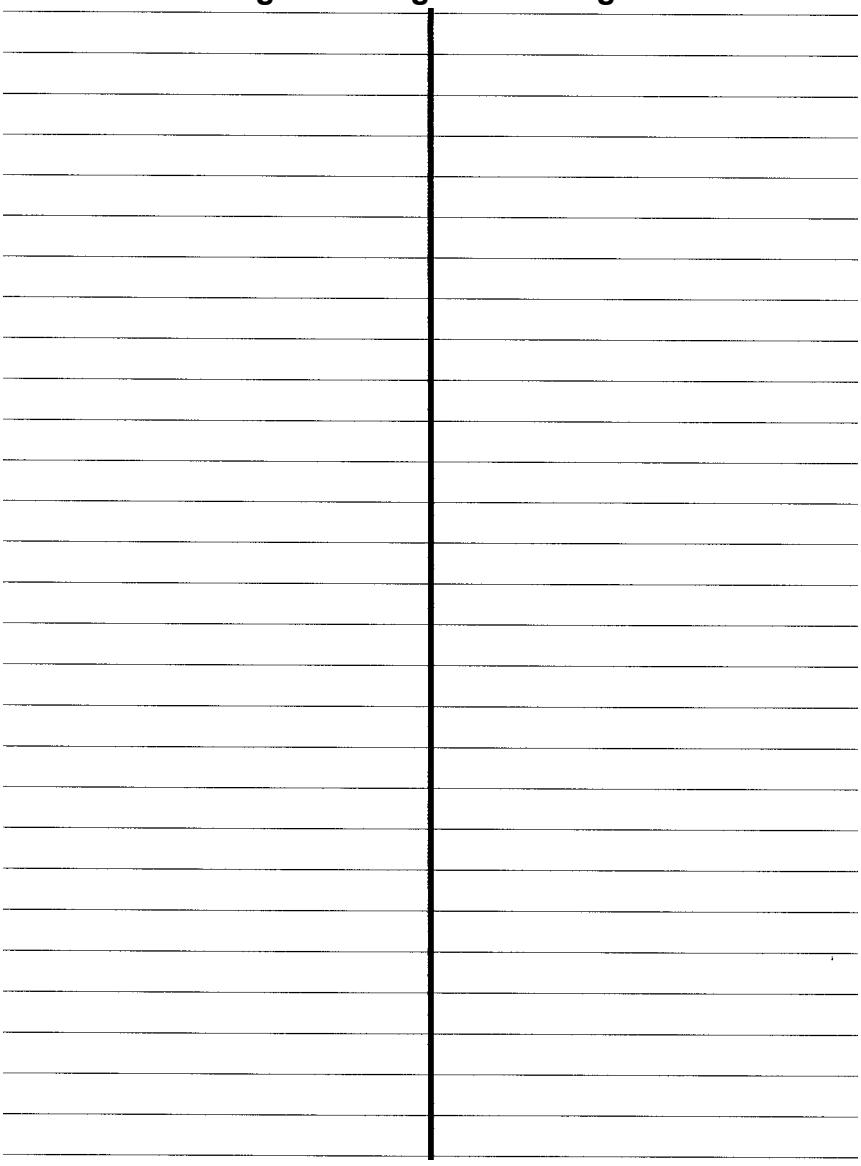
1.5.10 Test Print

The Test Print menu enables you to select which paper tray to use, you can enable or disable duplex printing, and select one of five test patterns.

Table 6. Test Print

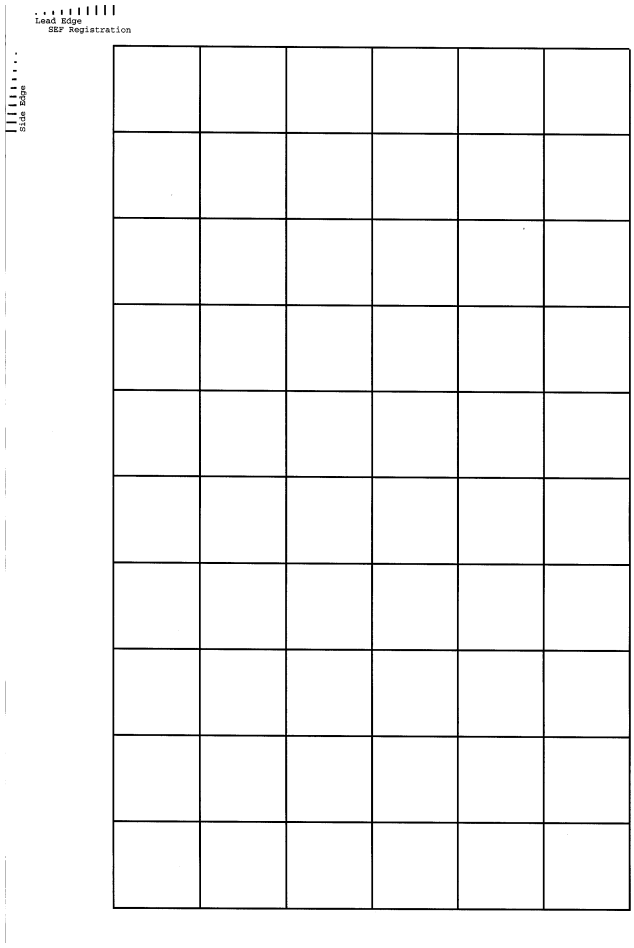
Test	Display	Function
Default Source	Tray1	Use the Next or Previous buttons to scroll through the menu. The choices are Tray1, Tray2, Tray3, Envelope Feeder, and MBF. With the desired tray displayed, pressing Select makes that tray the default source.
Duplex	On or Off	With On displayed. pressing Select enables the duplex unit. With Off displayed, pressing Select disables the duplex unit.
Engine Test Page	Engine Test Page	When Select is pressed, the engine test page is printed (Figure 1).
Grid Page	Grid Page	When Select is pressed, the grid page is printed (Figure 2). The grid page is used for registration align-ment.
Blank Page	Blank Page	When Select is pressed, the blank test page is printed (Figure 3). The blank page is used for print quality checks, paper damage, etc..
Black Page	Black Page	When Select is pressed, the black test page is printed (Figure 4). Black pages are used for image quality, solid area coverage, and drum defects.
Test Page	Test Page	When Select is pressed, the test page is printed (Figure 5).

Figure 1. Engine Test Page



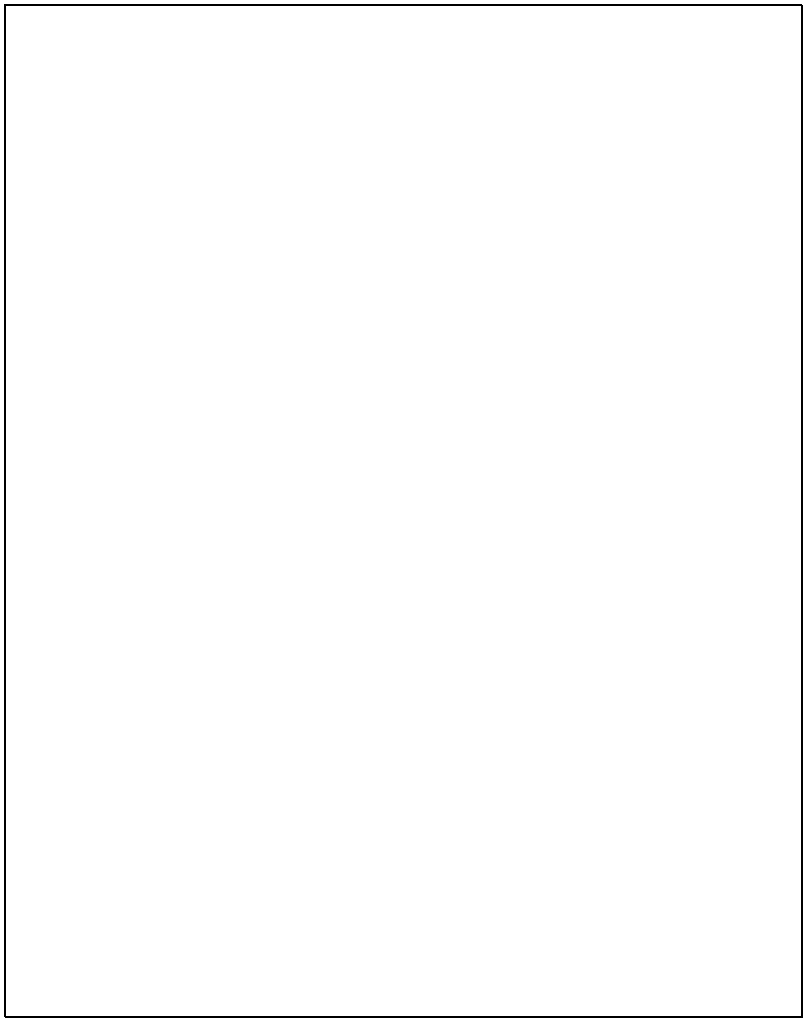
Example

Figure 2. Grid Page



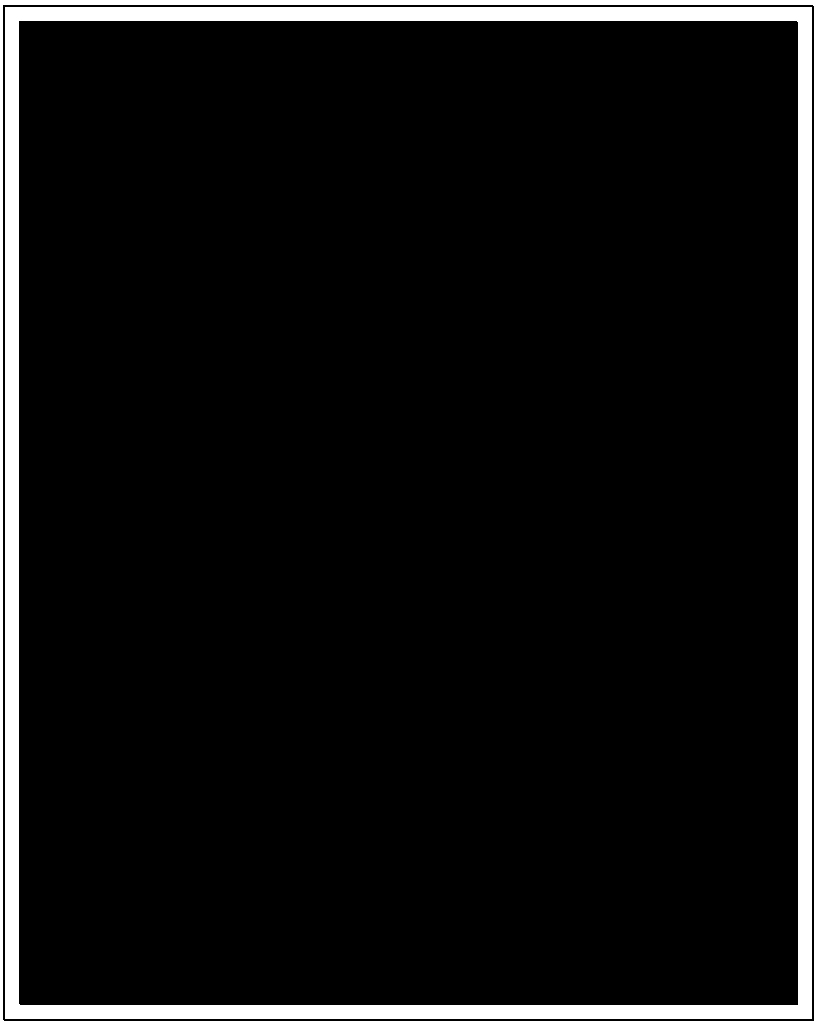
Example

Figure 3. Blank Page



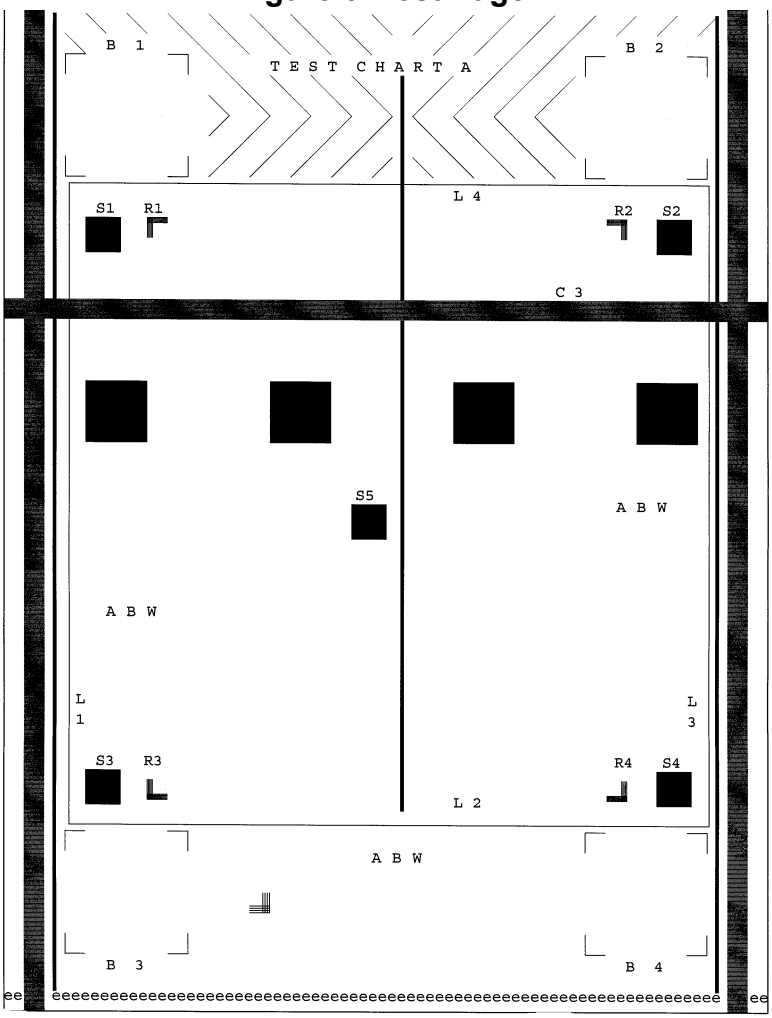
Example

Figure 4. Black Page



Example

Figure 5. Test Page

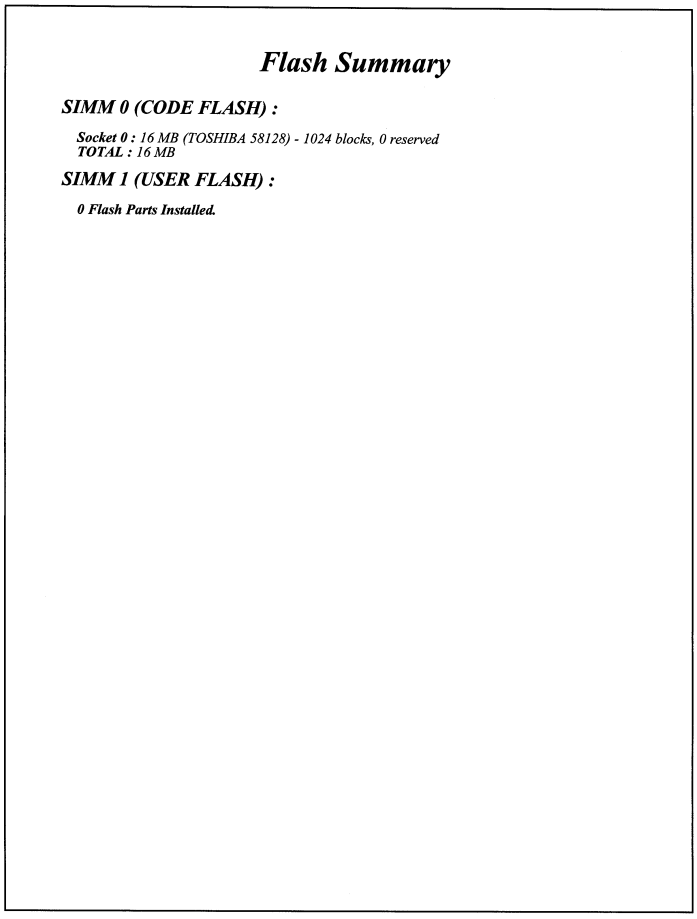


Example

1.5.11 Flash Summary

Pressing Select with flash summary displayed prints the Flash Summary Report. The report shows the status of the flash SIMMs. An example of the report is illustrated in Figure 6.

Figure 6. Flash Summary


Flash Summary
SIMM 0 (CODE FLASH) :
Socket 0 : 16 MB (TOSHIBA 58128) - 1024 blocks, 0 reserved
TOTAL : 16 MB
SIMM 1 (USER FLASH) :
0 Flash Parts Installed.

Example

1.5.12 Print Summary

Pressing Select with Print Summary displayed, prints the Print Summary Report. The report shows the status of all the operator menus, paper trays, options, and information on the printer itself. The report is usually on two pages. An example of the report is illustrated in Figure 7 and Figure 8.

Figure 7. Print Summary (page 1)

B6100

MENUS

Paper Menu
- Copies = 1
- Duplex = Off
- Duplex Bind = Long Edge
- Default Source = Tray 1
- Manual Feed = Off
- Output Tray = Offset Tray
- **Media Size/Type**
  - **Front Tray**
    - Media Size = Letter
    - Media Type = Plain
  - **Tray 1**
    - Media Type = Plain
  - **Tray 2**
    - Media Type = Plain
  - **Envelope Feeder**
    - Media Size = Com10 Envelope
- Tray Linking = On
- Job Offset = Off
- Blank Pages = Print
- Output Linking = On
- Front Tray First = Off
- Auto Resize = Off

Interface Menu
- **Port**
  - Parallel = On
  - Network Card 1 = On
  - USB = On
- **Parallel Setup**
  - Interpreter = Auto Switch
  - Format = Raw
  - Mode = Bidirectional
  - Delay Out Close = Off
- **Network 1 Setup**
  - Interpreter = Auto Switch
  - Format = Raw
  - **Network Channel**
    - Netware = On
    - DEC LAT = On
    - AppleTalk = On
    - TCP/IP = On
  - Network Address = 005027005CE5
  - IP Address = 010.005.001.154
  - Subnet Mask = 255.255.000.000
  - Default Router = 000.000.000.000
  - LPD Banner = On
  - DHCP = Off
  - Netware Frame = Auto-Sense
- **Network 1 Setup cont'd**
  - Delay Out Close = Off
- **USB Setup**
  - Interpreter = Auto Switch
  - Format = Raw
  - Delay Out Close = Off

PS Menu
- Print PS Errors = Off
- Manual Feed TO = 0

PCL Menu
- Orientation = Portrait
- Font Source = Internal
- Font Number = 12
- Pitch = 10.00
- Symbol Set = 10U:PC-8 CP437
- Macro Filter = Off
- Lines Per Page = 64
- CR Mode = CR=CR
- LF Mode = LF=LF
- FF Mode = FF=FF
- Print Area = Normal
- **Parameter Values**
  - **Paper Source**
    - Front Tray = 8
    - Tray 1 = 1
    - Tray 2 = 4
    - Envelope Feeder = 6
    - Auto-Select = 7
  - **Paper Size**
    - Executive = 1
    - Letter = 2
    - Legal = 3
    - Statement = 4
    - Folio = 5
    - A6 = 24
    - A5 = 25
    - A4 = 26
    - B5 = 45
    - Monarch Envelope = 80
    - Com10 Envelope = 81
    - DL Envelope = 90
    - C5 Envelope = 91

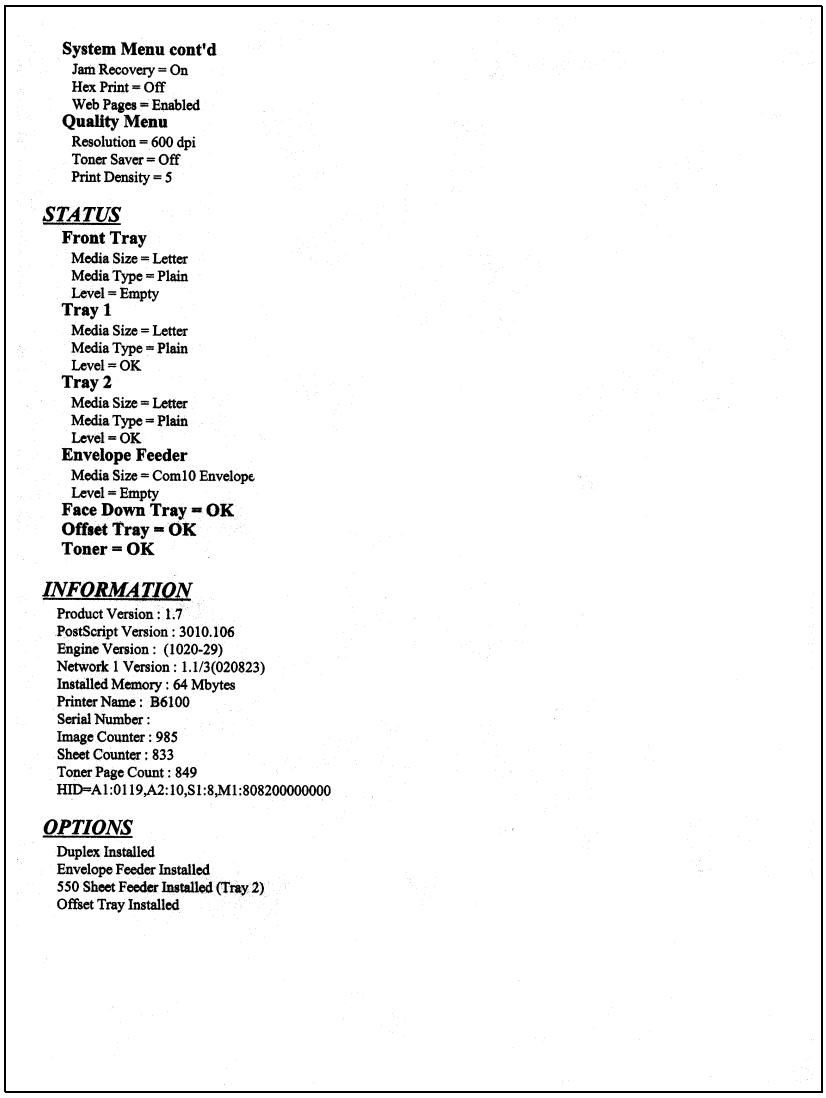
System Menu
- Display Language = English
- Power Saver = 93
- Wait Timeout = 40
- Job Timeout = 0

Adobe® PostScript® 3™

OKI®

Example

Figure 8. Print Summary (page 2)



System Menu cont'd
Jam Recovery = On
Hex Print = Off
Web Pages = Enabled
Quality Menu
Resolution = 600 dpi
Toner Saver = Off
Print Density = 5

STATUS
Front Tray
Media Size = Letter
Media Type = Plain
Level = Empty
Tray 1
Media Size = Letter
Media Type = Plain
Level = OK
Tray 2
Media Size = Letter
Media Type = Plain
Level = OK
Envelope Feeder
Media Size = Com10 Envelope
Level = Empty
Face Down Tray = OK
Offset Tray = OK
Toner = OK

INFORMATION
Product Version : 1.7
PostScript Version : 3010.106
Engine Version : (1020-29)
Network 1 Version : 1.1/3(020823)
Installed Memory : 64 Mbytes
Printer Name : B6100
Serial Number :
Image Counter : 985
Sheet Counter : 833
Toner Page Count : 849
HID=A1:0119,A2:10,S1:8,M1:808200000000

OPTIONS
Duplex Installed
Envelope Feeder Installed
550 Sheet Feeder Installed (Tray 2)
Offset Tray Installed

Example

Section 9 - Adjustment Mode

Contents

1.6 Adjustment Mode - - -

1.6 Adjustment Mode

1.6.1 Paper Size/Type Adjustment

There are many operator menus, configuration setups, settings, and functions that are accessible through the Menu Mode. All of these are explained in the operator manual. This topic deals with one area of the User Menu, setting the size and type of paper contained in each tray and feeder. The paper size and type can be set for each paper tray, the multisheet bypass feeder, and the envelope feeder.You must properly set each tray before you perform the registration adjustment.

1. From the Ready condition, press Menu.
2. With Paper Menu displayed, press Select.
3. Use the Next Button to scroll down the list until Media Size/Type is displayed.
4. Press the Select Button. Front Tray will be displayed (this is the Multisheet Bypass Feeder).
5. Press the Select Button. Media Size will be displayed. Press Select. You will have a choice of the following sizes for the tray:

Letter	B5	Statement
A5	A6	C5 Envelope
DL Envelope	COM 10 Envelope	Monarch Envelope
Executive	Legal	Folio
A4		

6. Use the Next Button to display your choice and press Select.
7. Press the Return Button to return to the Media Size/Type Menu.
8. Press the Next Button until Media type is displayed, then press Select. You will have a choice of the following media types:*

Plain	Transparency	Prepunched
Letterhead	Colored	preprinted
Bond	Label	Card stock
Postcard	Envelope	Other

9. Use the Next Button to display your choice and press Select.
10. Press the Return Button until Media Size/Type Menu is displayed.
11. Use the Next Button to display the next paper tray or feeder. Repeat steps 5 through 10 until all trays have been set.

*If the tray displayed is the Envelope feeder, you will have the following choice for Media Size:

COM 10 Envelope	Monarch Envelope
C5 Envelope	DL Envelope

12. When completed, press return a number of times until Ready is displayed

1.6.2 Registration Adjustment

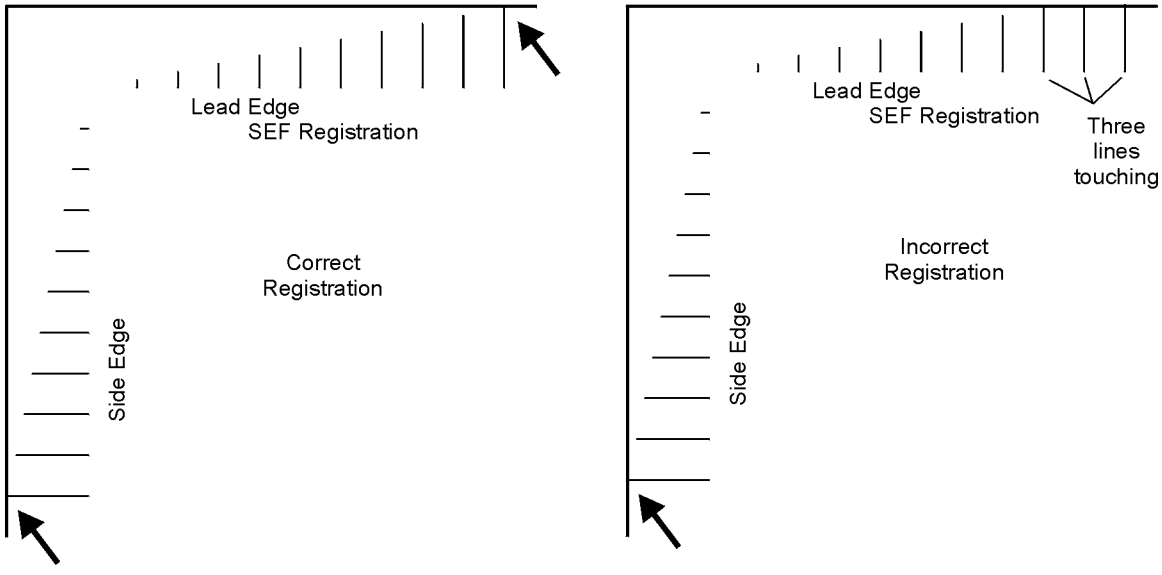
You can set the registration top to bottom (paper feed direction) and side to side (scan direction) for each paper tray and feeder attached to the printer.

Before starting the registration adjustment, make sure the stock in each tray is properly loaded. All guides are in the proper position, the stock is flat and clean (no bent corners) etc. Set the size and type for each tray (see 1.6.1).

If you have any problems navigating through the menus, see Section 8.

1. Enter the diagnostic menu. Use the Next Button to scroll down to the Test Print Menu press Select.
2. With Default Source displayed, Press Select.
3. Use the Next Button to display the tray or feeder you wish to adjust, then press Select.
4. Press Return until Test Print/Default Source is displayed. Use the Next Button to scroll down until Grid Page is displayed. Press Select.
5. A Grid Page will be printed. Mark the page with the tray or feeder that was used.
6. Use the Next or Previous Button to scroll until Default Source is displayed. Press Select.
7. Repeat steps 3 through 6 until you have a grid test pattern from each tray or feeder. Then go to step 8.
8. Compare the upper left corner of each document with Figure 1. Only the longest line on the lead edge and side edge should touch the edge of the paper.

Figure 1. Registration Adjustment



9. If all test patterns meet specification, exit this procedure. If not, go to step 10.
10. Press Return until Diagnostics/Test Print is displayed. Use the Next / Previous Button to scroll until Alignment is displayed. Press Select.
11. The alignment menu lists each tray/feeder and feed direction and scan direction. Use the Next Button to scroll to the tray/feeder and the direction where registration is mis-adjusted. Press Select.

12. The LCD will display the Tray and the direction and the value. The value can range from 0 to 15. For feed direction - increasing the value will move the image down the page. Decreasing the value moves the image up. For the scan direction - increasing the value moves the image to the left and decreasing the value moves the image to the right. Use the Next Button to increase the value and the Previous Button to decrease the value. Press Select.
13. Return to the Test Print Menu and run another Grid Pattern. Repeat steps 10 through 12 for each tray/feeder as necessary.

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Section 10 - Removal and Replacement Procedures (RRPs)

This section contains the removal and replacement procedure for main parts of the HAKUBA printer.

Preparation

1. Switch OFF the main power.
2. Disconnect the AC power cord from the wall outlet, then start work.
3. Remove the *Cassette Assy*.
4. Open the Cover Front.
5. Remove the EP cartridge and store it at a dark and safety place free from direct sunlight.
6. In performing work for the *FUSER ASSY* periphery, wait until the *FUSER ASSY* and its periphery have become cool enough.
7. Disconnect all interface cables from the rear panel of printer.
8. In performing work, to eliminate static electricity in your body, wear wristbands, etc. to take grounding properly.

Work Notes

NOTE

Many kinds of screws are used, and do not confuse where they are used. Using wrong screws could cause the tapped holes to be broken, or troubles to occur.

NOTE

In performing work with parts that are managed as spare parts but its procedure is not given, make sure how the parts have been mounted before starting work.

NOTE

Optional parts, as a rule, should be removed, but they may be left in the printer, on condition that they do not obstruct your work.

Section 10 - Removal and Replacement Procedures continued

Notations in the RRP text

¥The printer orientation expressed in the procedure is defined as follows.

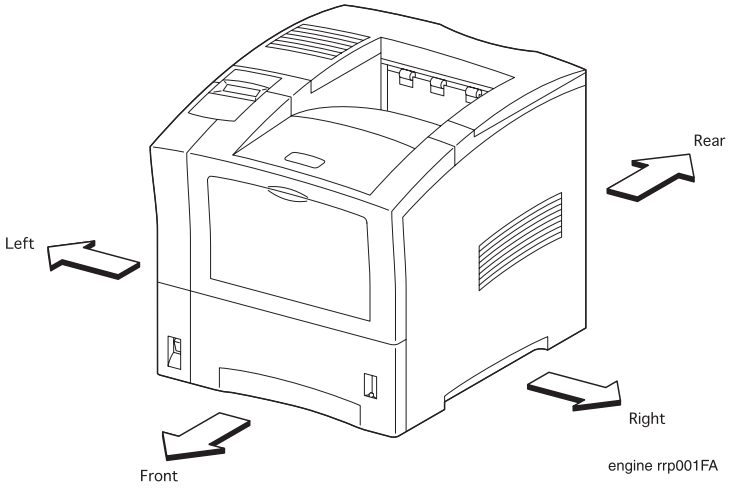

Figure 1. Definition of Printer Orientation

¥RRP X.Y.Z「AAAAAH」at the top of procedure implies that the part name to be removed/replaced is「AAAAAH」.

¥「(PLX.Y.Z)H」following part name in the procedure implies that this part corresponds to the plate (PL)「X.YH」, item「ZH」in Section 12 Parts List. Therefore, the shape and mounting position of the parts can be confirmed in Section 12 Parts List.

¥「(PPR X.Y.Z.)H」in the text or at the end of text in the procedure implies that reference work procedure is given in「PPR X.Y.ZH」.

¥The screws in the illustration imply that they should be loosened and removed using a cross-tip screw-driver, unless otherwise specified.

¥A black arrow in the illustration implies that the part should be moved in the arrow direction, and when numbers are assigned to black arrows, the parts should be moved in the order of given numbers.

¥For the location of connectors (P/J), refer to [Section 11 P/J Location].

Section 10 - Removal and Replacement Procedures (RRPs) continued

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RRP 1.1.1 Cover Left (PL1.1.1)

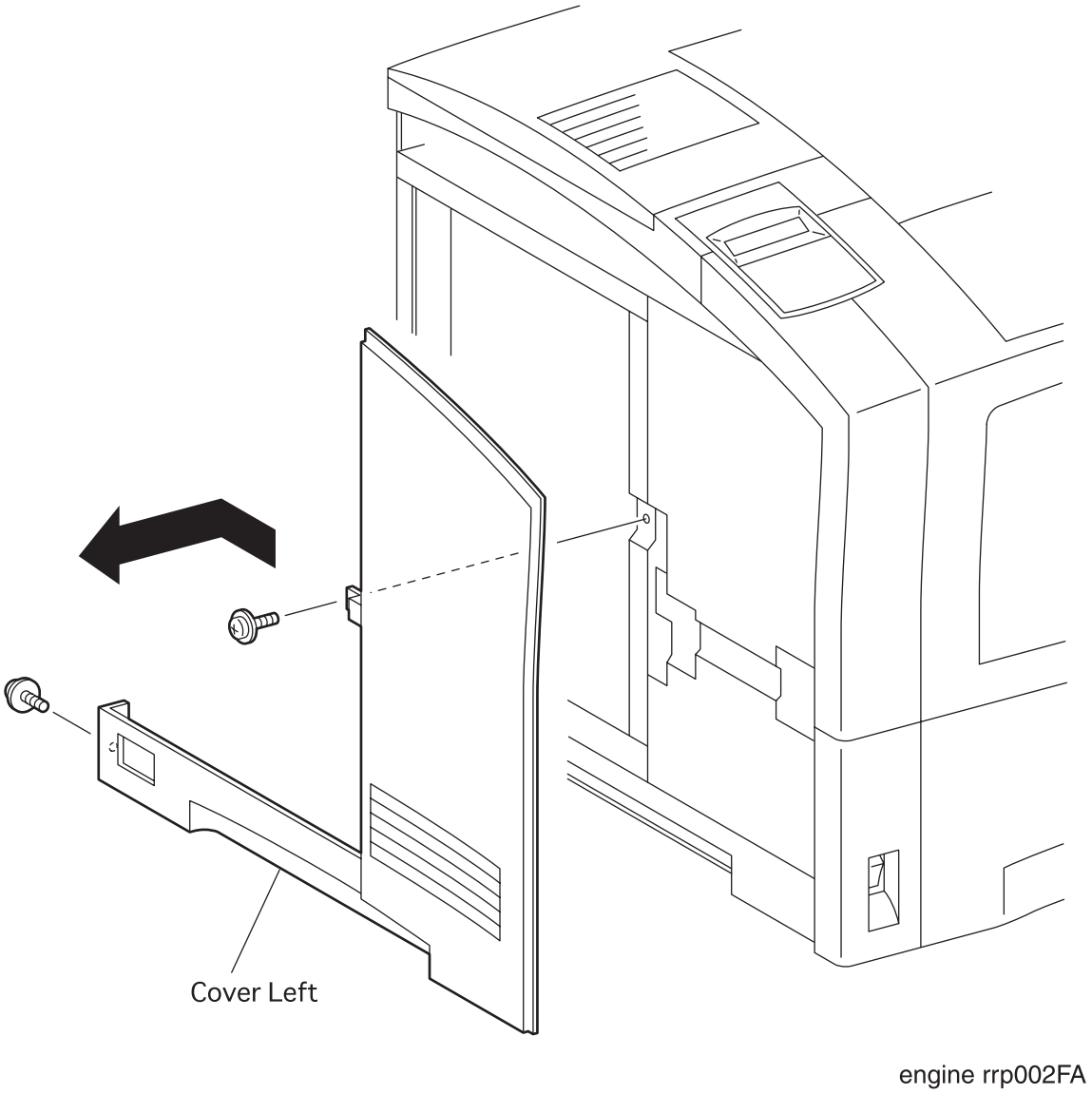

Figure 2. Cover Left Removal

RRP 1.1.1 Cover Left (PL1.1.1) continued

Removal

1. Remove the *Cover Assy I/F* (RRP 1.1.2).
2. Remove the two screws securing the *Cover Left* to the printer.
3. Remove the *Cover Left* from the printer.

Replacement

NOTE

In the following steps, mount the *Cover Left* while paying attention to the sections overlapped with the *Cover Assy Top* and the *Cover Assy L/H*.

1. Align the *Cover Left* with its mount position on the printer.
2. Secure the *Cover Left* to the printer with two screws.
3. Mount the *Cover Assy I/F* (RRP 1.1.2).

RRP 1.1.2 Cover Assy I/F (PL1.1.2)

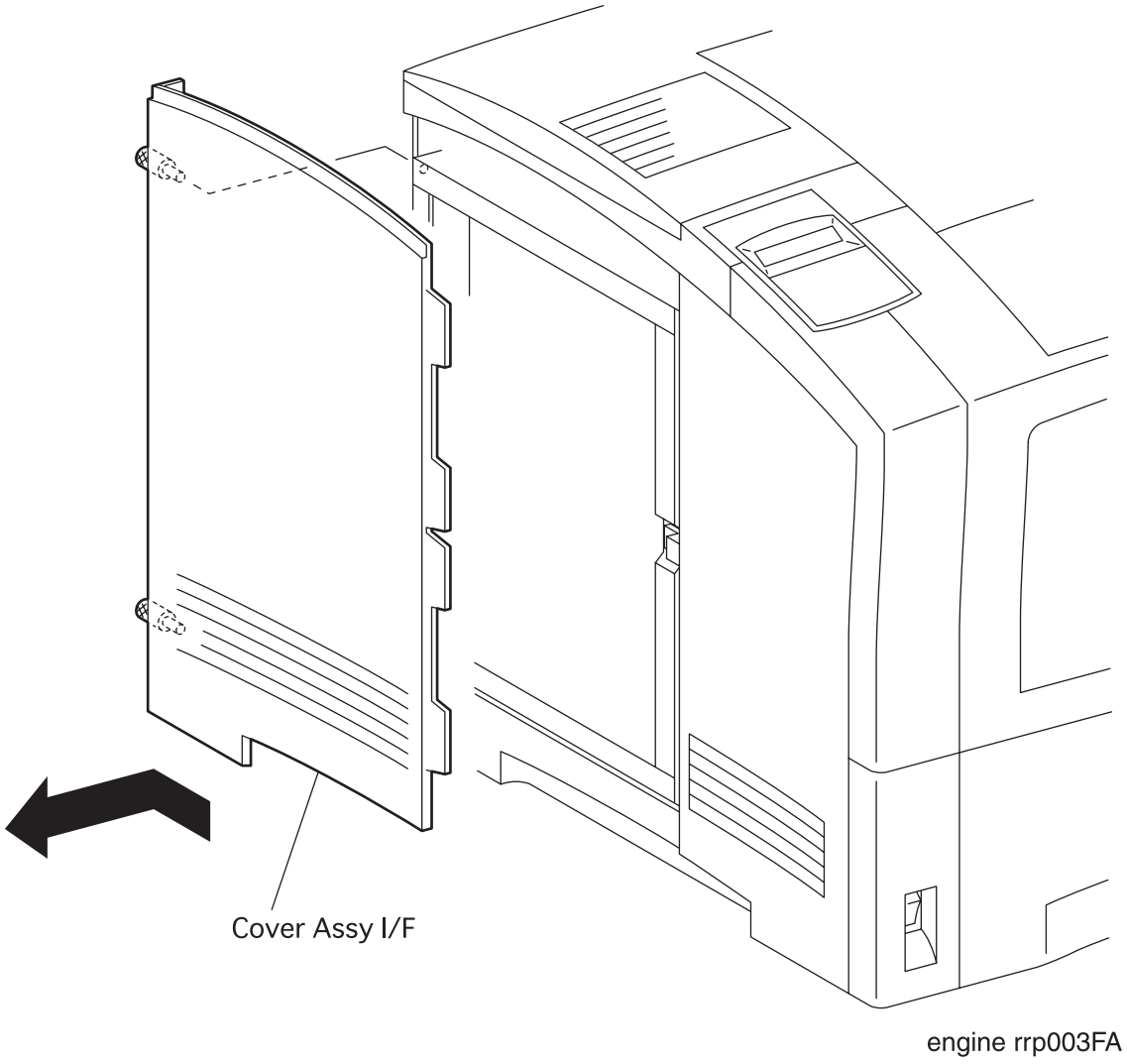

Figure 3. Cover Assy I/F Removal

RRP 1.1.2 Cover Assy I/F (PL1.1.2) continued

Removal

1. Remove the two screws securing the *Cover Assy I/F* to the printer.
2. Remove the *Cover Assy I/F* from the printer.

Replacement

NOTE

In the following steps, mount the *Cover Assy I/F* while paying attention to the sections overlapped with the *Cover Assy Top* and the *Cover Left*.

1. Align the *Cover Assy I/F* with its mount position on the printer.
2. Secure the *Cover Assy I/F* to the printer with two screws.

RRP 1.1.3 Cover Option (PL1.1.4)

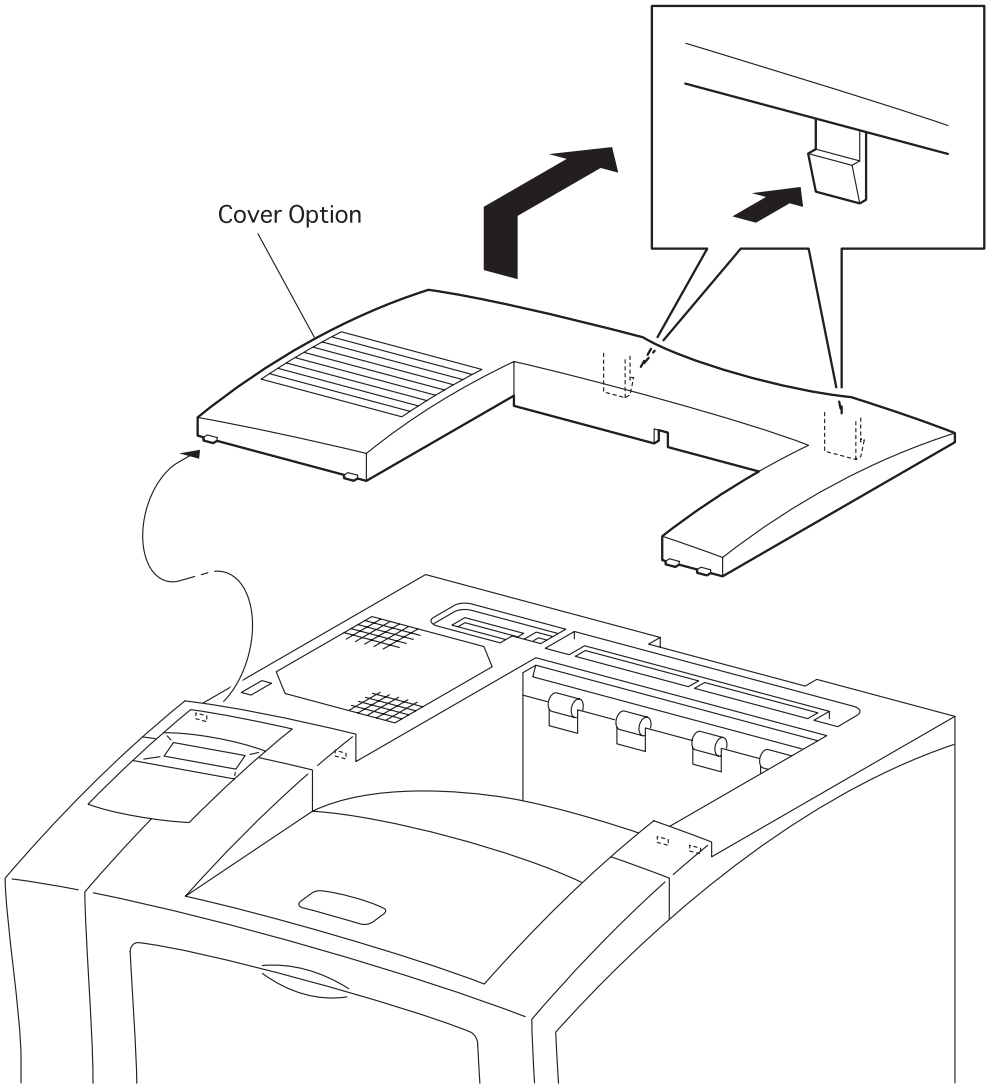

Figure 4. Cover Option Removal

RRP 1.1.3 Cover Option (PL1.1.4) continued

Removal

1. Open the *Cover Assy Rear*.
2. Pushing two latches at the rear of *Cover Option* from the printer, release the latches from the *Cover Assy Top* (PL1.1.5).
3. Remove the *Cover Option* from the printer.

Replacement

1. Align four bosses at the front of *Cover Option* with mounting holes in the *Cover Assy Top* (PL1.1.5).
2. Pushing the rear side of *Cover Option*, insert two latches of *Cover Option* into the *Cover Assy Top*.
3. Close the *Cover Assy Rear* .

RRP 1.1.4 Cover Assy Top (PL1.1.5)

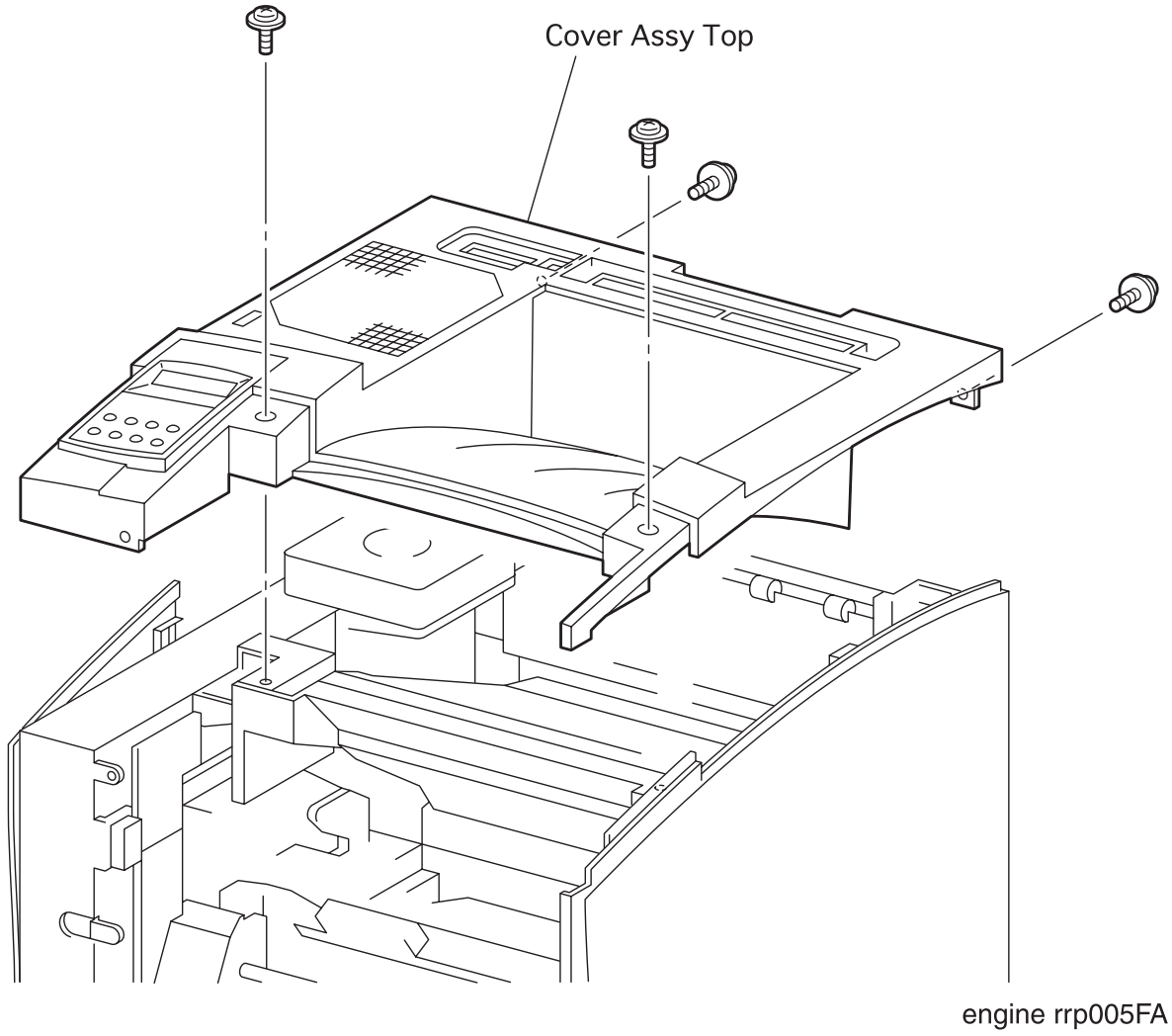

Figure 5. Cover Assy Top Removal

RRP 1.1.4 Cover Assy Top (PL1.1.5) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Open the *Cover Assy Rear* .
4. Remove the *Cover Option* (RRP 1.1.3).
5. Remove the four screws securing the *Cover Assy Top* to the printer.
6. Raising a little the *Cover Assy Top* from the printer, unplug the connector (P/J362) on the back side of *Control Assy Panel* (PL1.1.6).
7. Remove the *Cover Assy Top* from the printer.
8. Remove the *Control Assy Panel* (RRP 1.1.5).

Replacement

NOTE

In the following steps, mount the *Cover Assy Top* while paying attention to the sections overlapped with the *Cover Left*, *Cover Assy I/F*, and *Cover Right*.

1. Mount the *Control Assy Panel* (RRP 1.1.6) on the *Cover Assy Top* (RRP 1.1.5).
2. Plug the connector (P/J362) on the back side of *Control Assy Panel* from the *Cover Assy Top*.
3. Align the *Cover Assy Top* with its mount position on the printer.
4. Secure the *Cover Assy Top* to the printer with four screws.
5. Mount the *Cover Option* (RRP 1.1.3).
6. Close the *Cover Assy Rear* .
7. Mount the *Cover Front L/H* (RRP 1.1.10).
8. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 1.1.5 Control Assy panel (PL1.1.6)

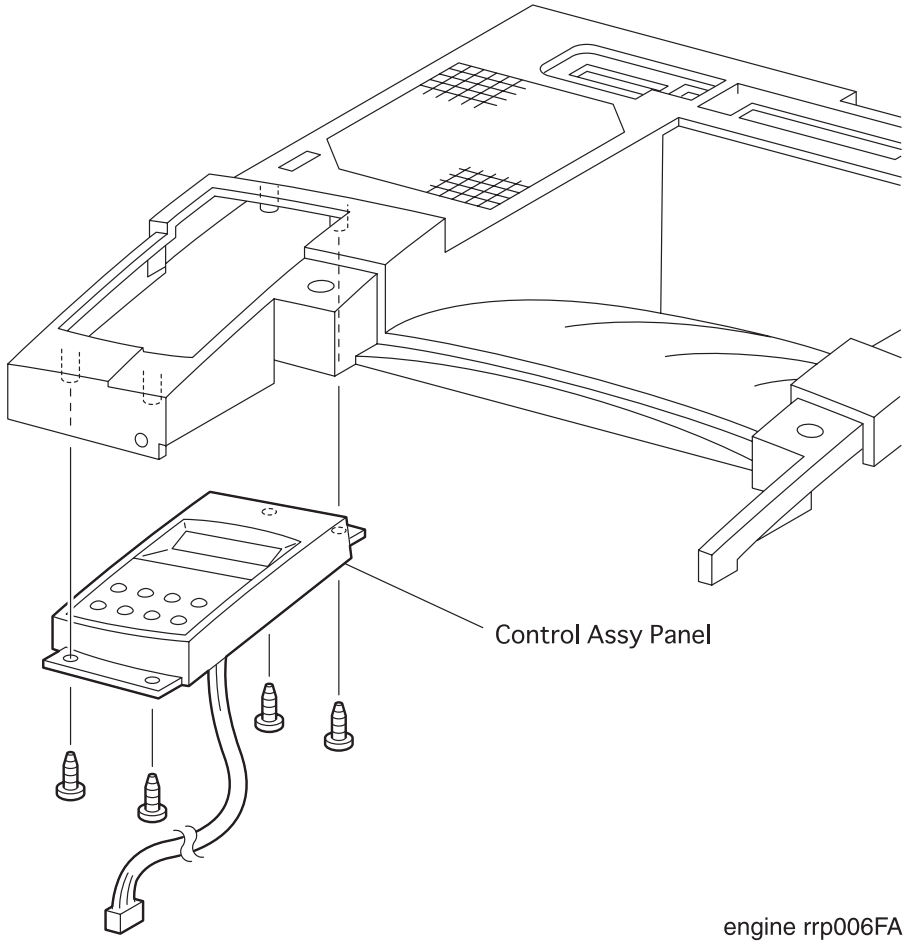

Figure 6. Control Assy Panel Removal

RRP 1.1.5 Control Assy Panel (PL1.1.6) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Open the *Cover Assy Rear*.
4. Remove the *Cover Assy Top* (RRP 1.1.4).
5. Remove the four screws securing the *Control Assy Panel* to the *Cover Assy Top* (PL1.1.5).
6. Remove the *Control Assy Panel* from the *Cover Assy Top*.

Replacement

NOTE

In the following steps, mount the *Control Assy Panel* while paying attention to the sections overlapped with the *Cover Assy Top*.

1. Align the *Control Assy Panel* with its mount position on the *Cover Assy Top*.
2. Secure the *Control Assy Panel* to the *Cover Assy Top* (PL1.1.5) with four screws.
3. Mount the *Cover Assy Top* (RRP 1.1.4).
4. Close the *Cover Assy Rear* .
5. Mount the *Cover Front L/H* (RRP 1.1.10).
6. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 1.1.6 Harness Assy Panel (PL1.1.7)

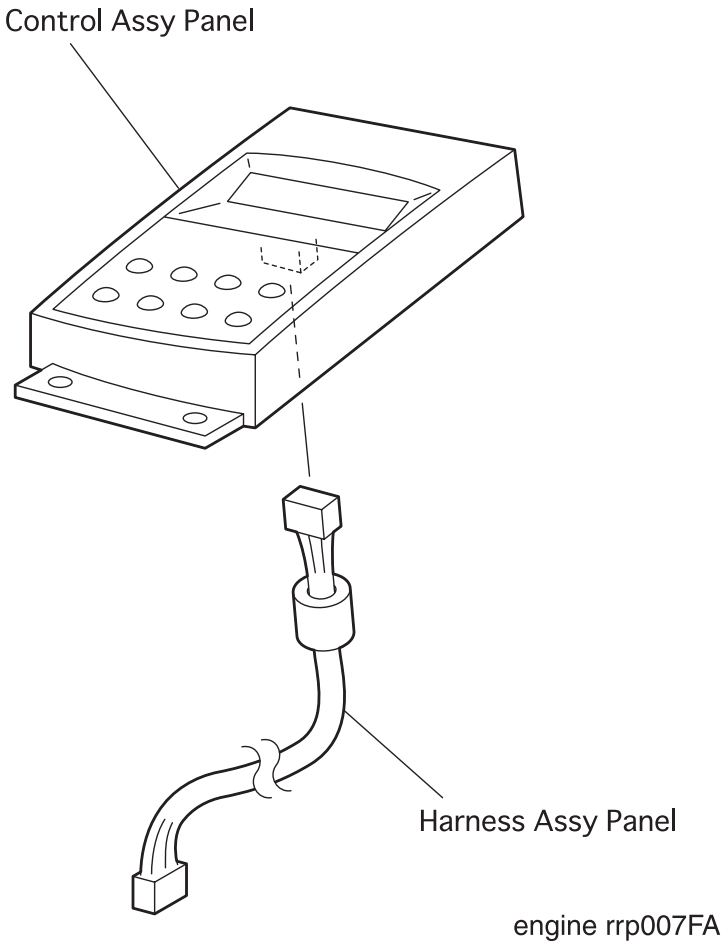

Figure 7. Harness Assy Panel Removal

RRP 1.1.6 Harness Assy Panel (PL1.1.7) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Open the *Cover Assy Rear*.
4. Remove the *Cover Assy Top* (RRP 1.1.4).
5. Remove the *Cover Assy Panel* (PL1.1.5).
6. Unplug the connector (P/J363) of *Harness Assy Panel* from the *Control Assy Panel* (PL1.1.6), and remove the *Harness Assy Panel*.

Replacement

NOTE

In the following steps, mount the *Harness Assy Panel* while paying attention to the sections overlapped with the *Cover Assy Top*.

1. Plug the connector (P/J363) of *Harness Assy Panel* to the *Control Assy Panel* (PL1.1.6), and mount the *Harness Assy Panel*.
2. Mount the *Control Assy Panel*(PL1.1.5).
3. Mount the *Cover Assy Top* (RRP 1.1.4).
4. Close the *Cover Assy Rear* .
5. Mount the *Cover Front* L/H (RRP 1.1.10).
6. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 1.1.7 Cover Right (PL1.1.8)

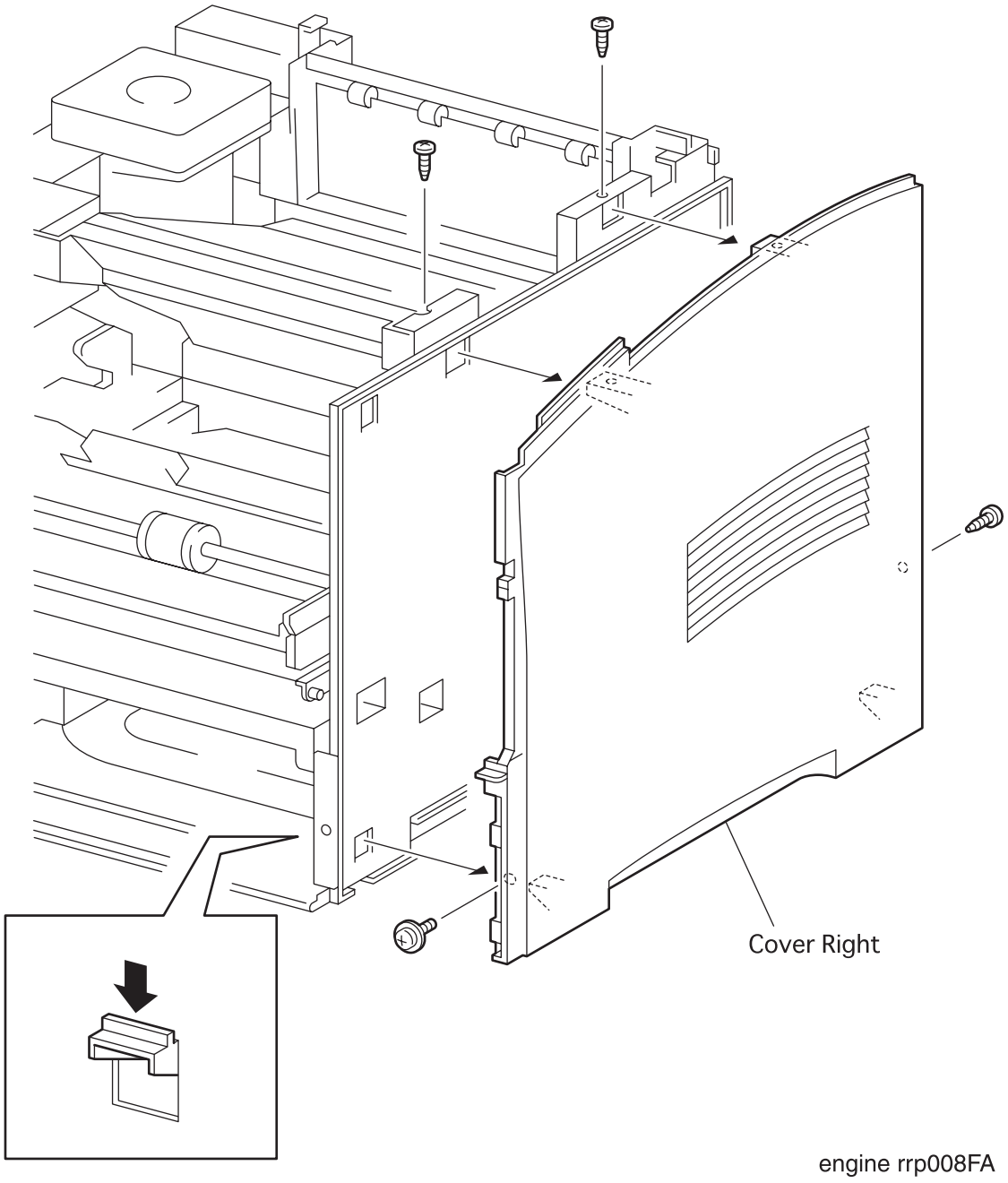

Figure 8. Cover Right Removal

RRP 1.1.7 Cover Right (PL1.1.8) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Open the *Cover Assy Rear* .
4. Remove the *Cover Assy Top* (RRP 1.1.4).
5. Remove the four screws securing the *Cover Right* to the printer.
6. Disengage two hooks at the top of *Cover Right* from the holes in the printer.
7. Disengage two hooks at the bottom of *Cover Right* from the holes in the printer.
8. Remove the *Cover Right*.

Replacement

NOTE

In the following steps, mount the *Cover Right* while paying attention to the sections overlapped with the *Cover Assy Top*.

1. Align the *Cover Right* with its mount position on the printer.
2. Engage four hooks of the *Cover Right* with the holes in the printer to lock.
3. Secure the *Cover Right* to the printer with four screws.
4. Mount the *Cover Assy Top* (RRP 1.1.4).
5. Close the *Cover Assy Rear* .
6. Mount the *Cover Front L/H* (RRP 1.1.9).
7. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 1.1.8 Cover Assy Front (PL1.1.9)

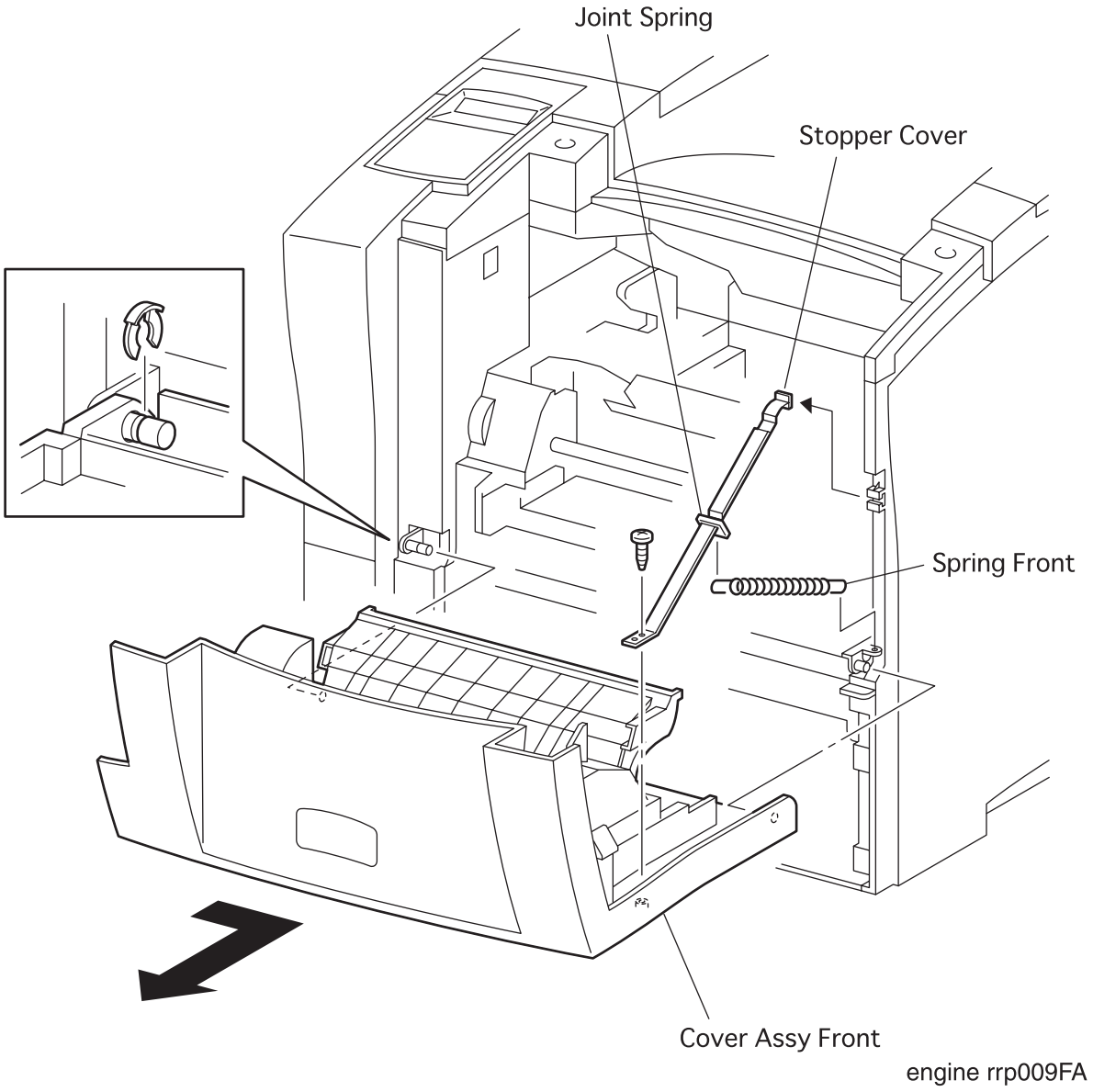

Figure 9. Cover Assy Front Removal

RRP 1.1.8 Cover Assy Front (PL1.1.9) continued

Removal

1. Open the *Cover Assy Front* (PL1.1.9).

NOTE

In the following steps, take care not to drop and then damage the *Cover Assy Front*.

2. Remove the hook of the Spring Front (PL 1.1.25) hangs the Joint Spring(PL 1.1.24) on the main unit from the hole of the unit.
3. Move the tip of the Stopper Cover (PL 1.1.14)from the right side of the unit to the left side ,and then remove it from the Cover Assy Front.
4. Remove the KL clip that secures the left bearing bore of *Cover Assy Front* to the left stud of the printer.
5. From the *Cover Right* (PL1.1.8), remove the *Stopper Cover* that secures the *Cover Assy Front* to the printer.
6. Sliding the *Cover Assy Front* to the right from the printer, release the left and right bearing bores of *Cover Assy Front* from the left and right studs, then remove the *Cover Assy Front*.

Replacement

NOTE

In the following steps, take care not to drop and then damage the *Cover Assy Front*.

1. Aligning the left and right bearing bores of *Cover Assy Front* with the left and right studs of the opprinter, mount the *Cover Assy Front* on the printer.
2. Fasten the tip of the Stopper Cover(PL 1.1.14) on the Cover Assy Front by a screw.
3. Set the tip of the Stopper Cover (PL 1.14)to the setting position placed right side of the unit with the Joint Spring(PL 1.1.24)and the Spring Front (PL 1.1.25).
4. Hang the hook of the Spring Front on the hole placed the right side of the unit.
5. Secure the left bearing bore of *Cover Assy Front* to the left stud of printer with the KL clip.
6. Close the *Cover Assy Front*.

RRP 1.1.9 Tray Assy MBF (PL1.1.17)

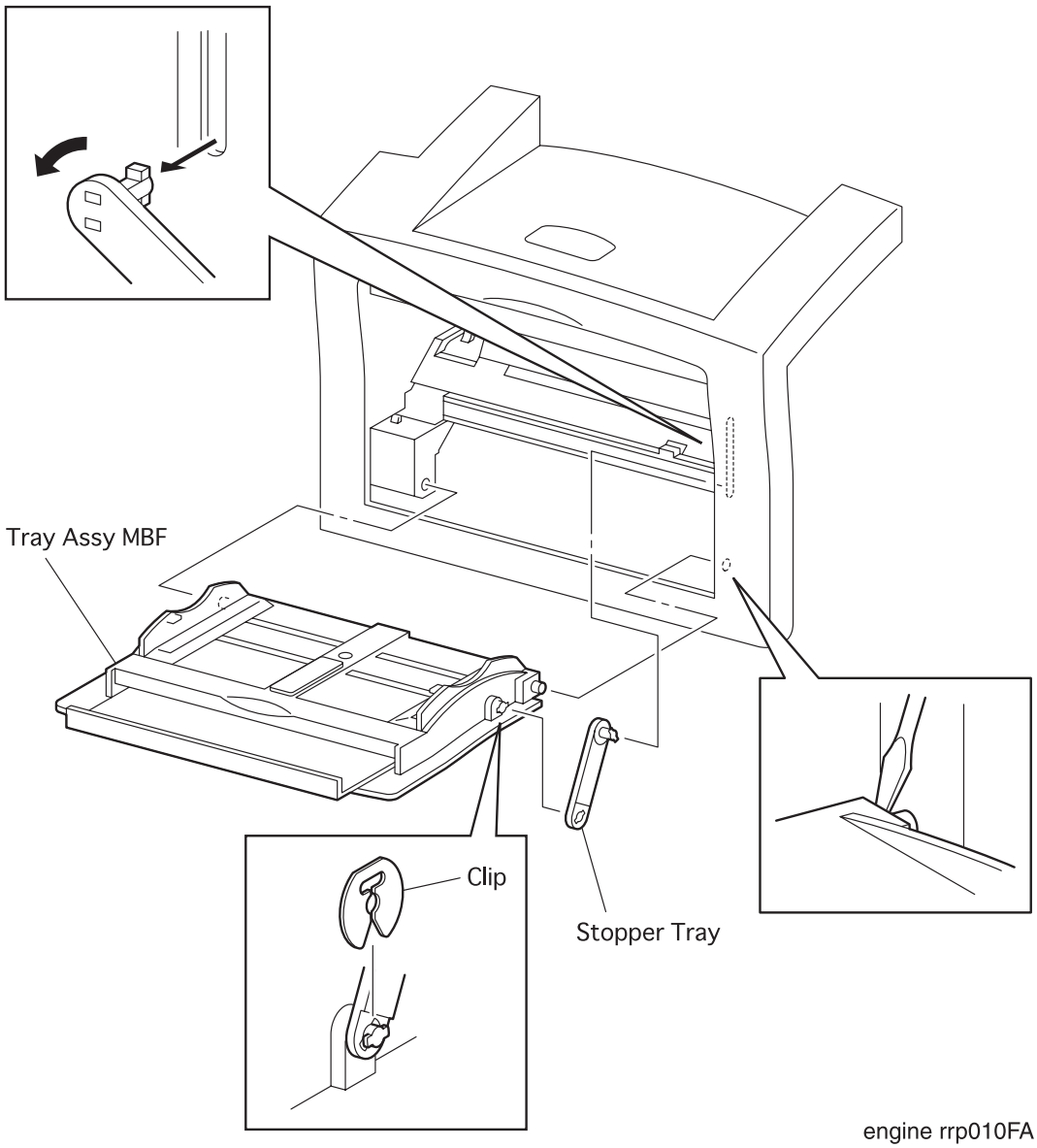

Figure 10. Tray Assy MBF Removal

RRP 1.1.9 Tray Assy MBF (PL1.1.17) continued

Removal

1. Open the *Cover Assy Front* (PL1.1.9).
2. Remove the *Cover Assy Front* (RRP 1.1.8).
3. Disengage the *Clip*(PL1.1.22) that secures the *Stopper Tray*(PL1.1.16) to the *Tray Assy MBF*.

NOTE

In the following steps, do not detach *Cover Assy Front* and *Tray Assy MBF* far away because they are linked with the *Stopper Tray* (PL 1.1.16).

4. Face the *Cover Assy Front* toward the rear, insert a small screwdriver into a gap at the front right end between *Cover Assy Front* and *Tray Assy MBF* to deflect the right side of *Cover Assy Front*, and disengage the boss.
5. Insert a small screwdriver into a gap at the front left end between *Cover Assy Front* and *Tray Assy MBF* to deflect the left side of *Cover Assy Front*, and disengage the boss, then detach the *Tray Assy MBF*.
6. Aligning the boss of *Tray Assy MBF* with a slit of *Stopper Tray*, remove the *Tray Assy MBF* from the *Cover Assy Front*.

Replacement

1. Aligning the boss of *Tray Assy MBF* with a slit of *Stopper Tray* (PL1.1.16), mount the *Tray Assy MBF*.

NOTE

In the following steps, do not detach *Cover Assy Front* and *Tray Assy MBF* far away because they are linked with the *Stopper Tray*.

2. Face the *Cover Assy Front* toward the rear, insert the left boss of *Tray Assy MBF* into the left hole in the *Cover Assy Front*.
3. Insert a small screwdriver into a gap at the front right end between *Cover Assy Front* and *Tray Assy MBF* to deflect the right side of *Cover Assy Front*, and engage the boss at the front right end of *Tray Assy MBF*.
4. Secure the *Stopper Tray* to the shaft of *Tray Assy MBF* with the *Clip*(PL1.1.22).
5. Mount the *Cover Assy Front* (RRP 1.1.8).
6. Close the *Cover Assy Front* (PL1.1.9).

RRP 1.1.10 Cover Front L/H (PL1.1.19)

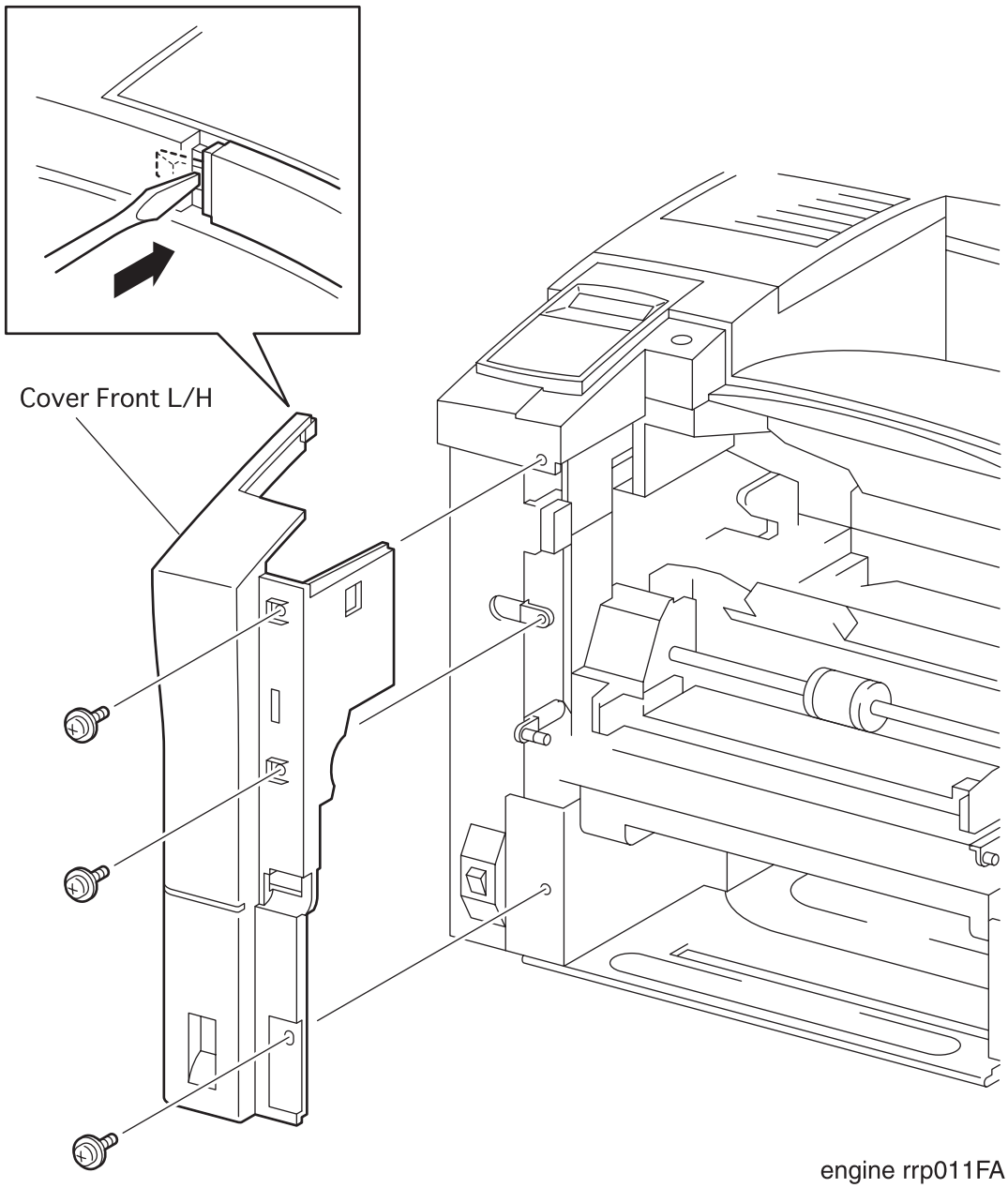

Figure 11. Cover Front L/H Removal

RRP 1.1.10 Cover Front L/H (PL1.1.19) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the three screws securing the *Cover L/H* to the printer.
3. Disengage the upper left hook of *Cover L/H*, draw it a little toward the front from the printer.
4. Remove the *Cover L/H* from the printer.

Replacement

NOTE

In the following steps, mount the *Cover L/H* while paying attention to the sections overlapped with the *Cover Assy Top* and *Cover Left*.

1. Aligning the *Cover L/H* with its mount position to the printer.
2. Engage the hook of *Cover L/H* with a hole on the left side of *Cover Assy Top* to secure the *Cover L/H*.
3. Secure the *Cover L/H* to the printer with three screws.
4. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 1.2.1 Cap Envelope (PL1.2.7)

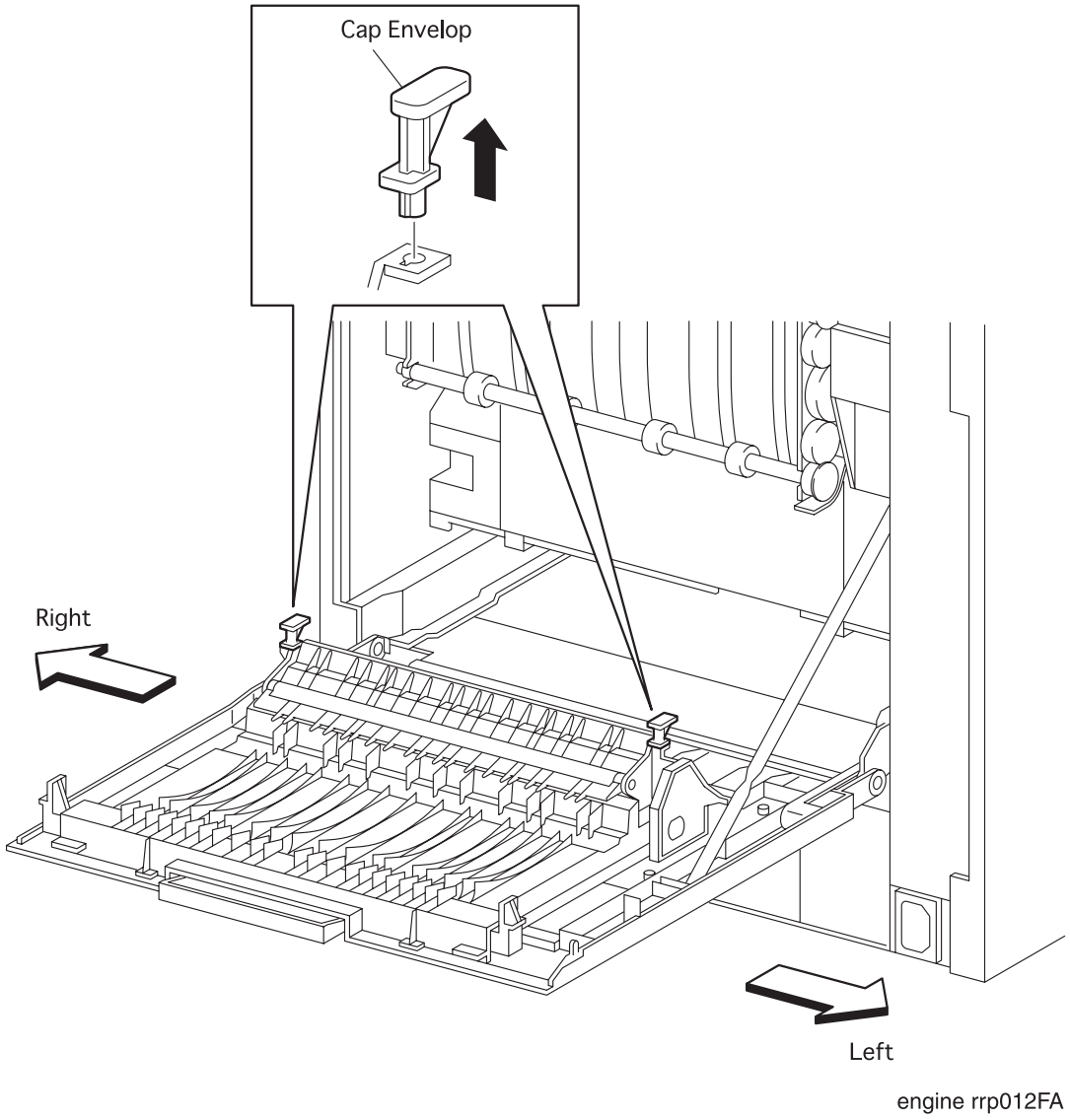

Figure 12. Cap Envelope Removal

RRP 1.2.1 Cap Envelope (PL1.2.7) continued

Removal

1. Open the *Cover Assy Rear* from the printer.
2. Draw the right *Cap Envelope* secured to the *Chute Assy Face Up* (PL1.2.8) from the *Cover Assy Rear* .
3. Draw the left *Cap Envelope* secured to the *Chute Assy Face Up* from the *Cover Assy Rear*.

Replacement

1. Mount the *Cap Envelope* on the right hole in the *Chute Assy Face Up* (PL1.2.8) of the *Cover Assy Rear* .
2. Mount the *Cap Envelope* on the left hole in the *Chute Assy Face Up* of the *Cover Assy Rear*.
3. Close the *Cover Assy Rear*.

RRP 1.2.2 Stopper (PL1.2.10)

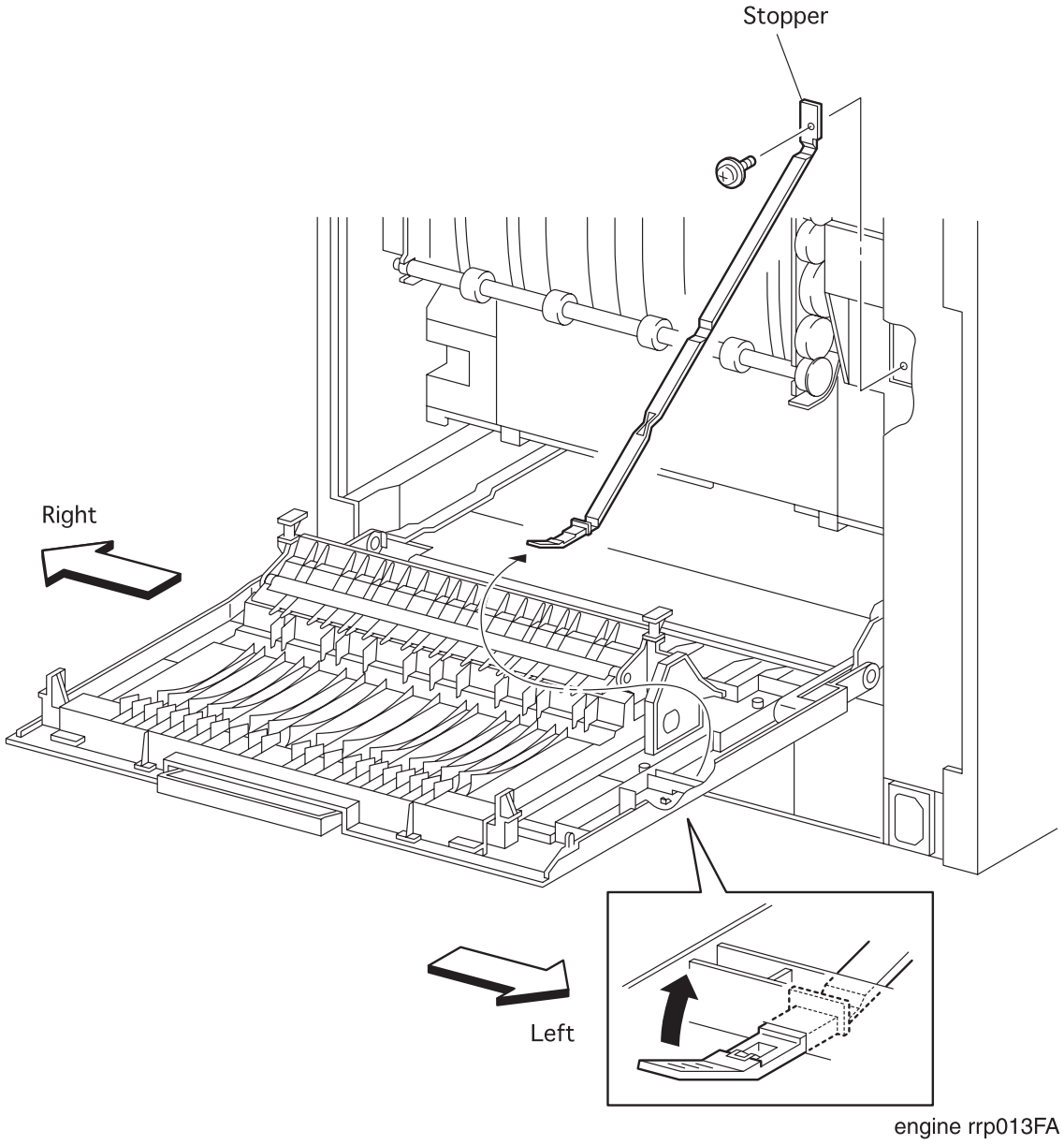

Figure 13. Stopper Removal

RRP 1.2.2 Stopper (PL1.2.10) continued

Removal

1. Remove the *Cover Assy Rear* (RRP1.2.3)
2. Remove the one screw securing the *Stopper* to the printer.
3. Remove the *Stopper* to the printer.

Replacement

1. Align the *Stopper* with its mount position to the printer.
2. Secure the *Stopper* to the printer with one screw.
3. Mount the *Cover Assy Rear* (RRP1.2.3).

RRP 1.2.3 Cover Assy Rear(Standard) (Reference Only)

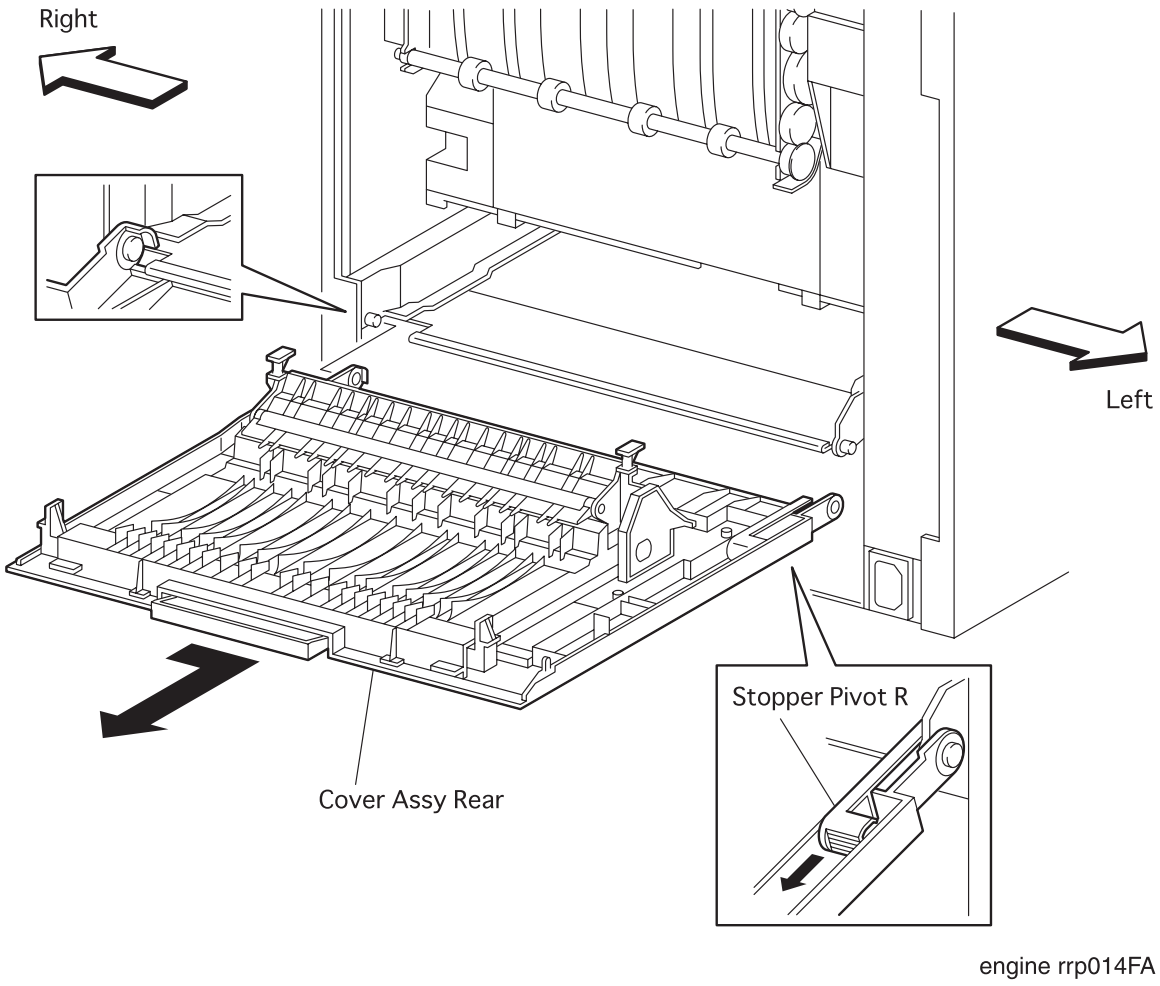

Figure 14. Cover Assy Rear(Standard) Removal

RRP 1.2.3 Cover Assy Rear(Standard) (Reference Only) continued

Removal

NOTE

In the following steps, take care not to drop and then damage the *Cover Assy Rear*.

1. Open the *Cover Assy Rear* from the printer.
2. Draw the lead edge of *Stopper* (PL1.2.10) secured to the *Cover Assy Rear* off the hole in the *Cover Assy Rear*.
3. Pull upward to unlock the *Stopper Pivot R* (PL1.2.9) that secures the left *Cover Assy Rear* to the printer.
4. Sliding the *Cover Assy Rear* to the left, release the bearing bores of *Cover Assy Rear* from the left and right bosses of printer and remove it from the printer.

Replacement

NOTE

In the following steps, take care not to drop and then damage the *Cover Assy Rear*.

1. Align the left and right bearing bores of *Cover Assy Rear* with the left and right bosses on the rear side of the printer.
2. Sliding the *Cover Assy Rear* to the right, mount it on the printer.
3. Secure the left side of *Cover Assy Rear* to the printer with the *Stopper Pivot R* (PL1.2.9).
4. Insert the lead edge of *Stopper* (PL1.2.10) into a hole in the *Cover Assy Rear*.
5. Close the *Cover Assy Rear*.

RRP 1.2.4 Chute Assy Face Up (PL1.2.8)

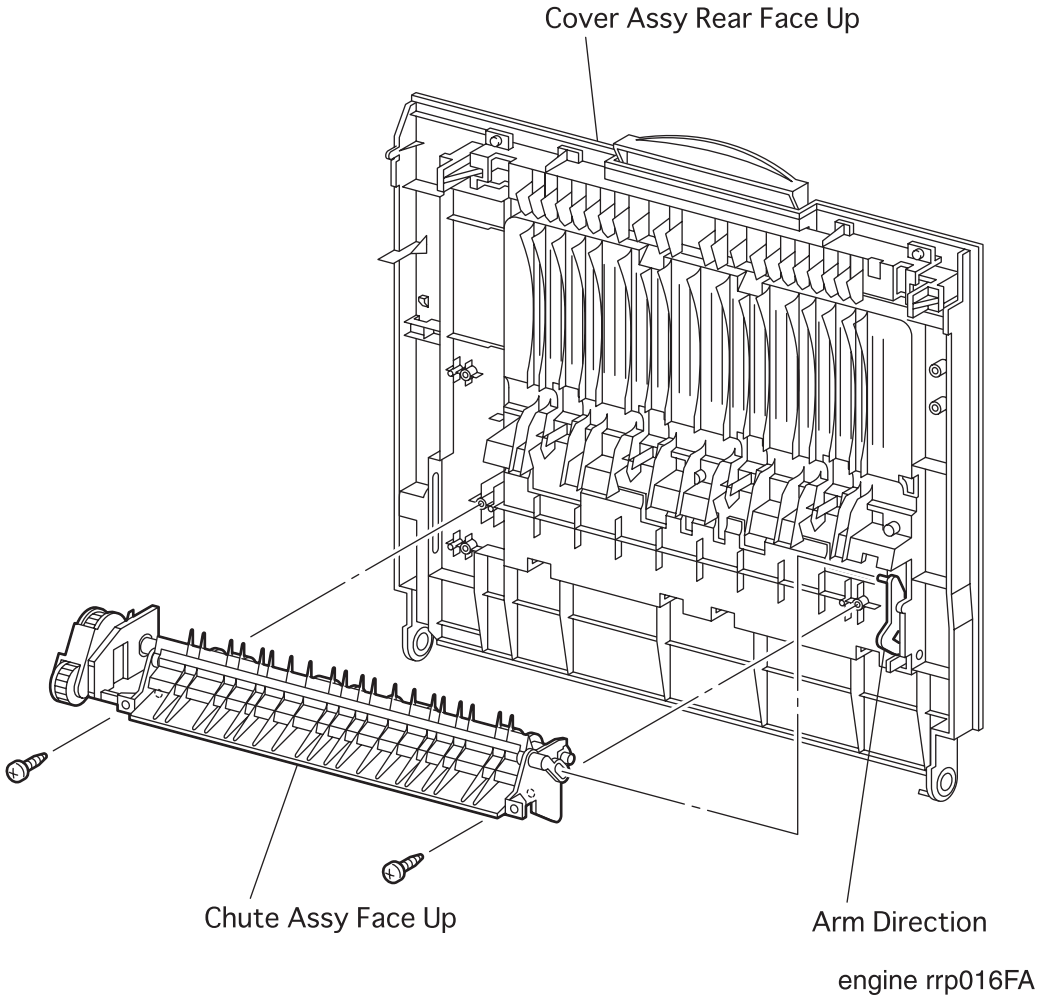

Figure 15. Chute Assy Face Up Removal

RRP 1.2.4 Chute Assy Face Up (PL1.2.8) continued.

Removal

1. Remove the *Cover Assy Rear Face Up* (RRP 1.2.3).
2. Remove the two screws securing the *Chute Assy Face Up* to the *Cover Assy Rear*.
3. Remove the *Chute Assy Face Up* from the *Cover Assy Rear*.

Replacement

1. Engage the right hole in the *Chute Assy Face Up* with a boss of *Arm Direction* (PL1.2.6) on the *Cover Assy Rear*(PL1.2.5).
2. Adjust the Chute Assy Face Up to the setting position of the Cover Assy Rear Face Up, and then fasten it by both screws.
3. Mount the *Cover Assy Rear Face Up* (RRP 1.2.3).

RRP 2.1.1 Cassette Assy (PL2.1.1)

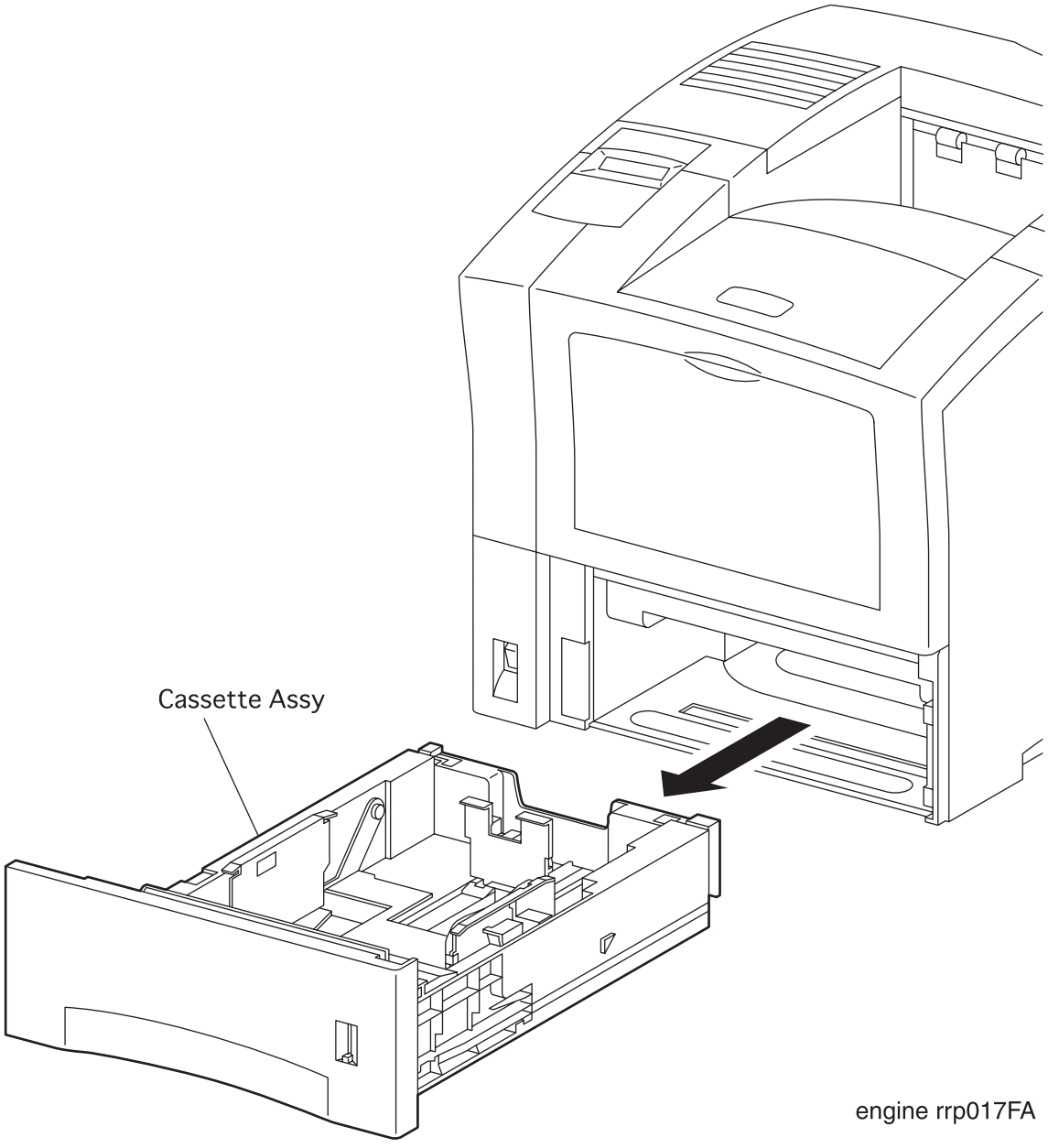

Figure 16. Cassette Assy Removal

RRP 2.1.1 Cassette Assy (PL2.1.1) continued

Removal

1. Draw the *Cassette Assy* from the printer.

Replacement

1. Aligning the position exactly, insert the *Cassette Assy* into the printer.

RRP 2.2.1 Clutch Assy Friction (PL2.2.7)

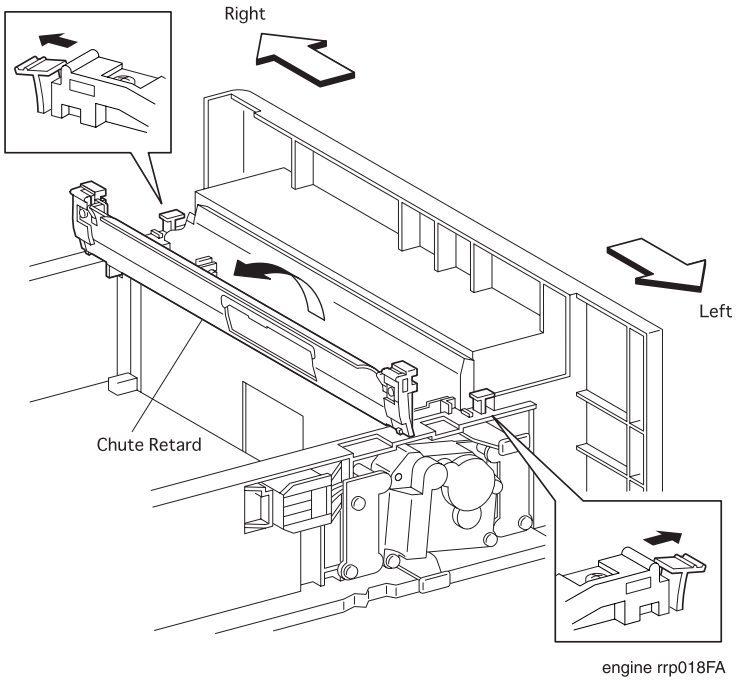

Figure 17. Clutch Assy Friction Removal(1)

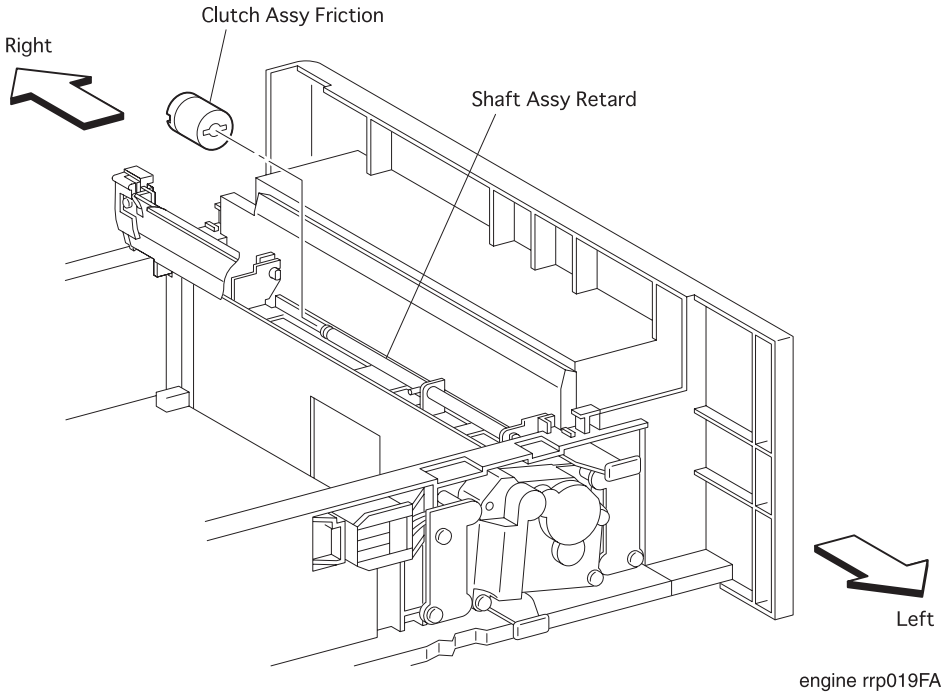

Figure 18. Clutch Assy removal(2)

RRP 2.2.1 Clutch Assy Friction (PL2.2.7) continued

Removal

1. Draw the *Cassette Assy* (PL2.1.1) from the printer.
2. Release the left and right latches of *Cassette Assy* that secures the *Chute Retard Base L* (PL2.2.3) and *Chute Retard Base R* (PL2.2.5) from the *Cassette Assy*.
3. Open the *Chute Retard* (PL2.2.4) together with *Chute Retard Base L* and *Chute Retard Base R* from the *Cassette Assy*.
4. Remove the *Roll Assy* (RRP 2.2.2).
5. Draw the *Clutch Assy Friction* of the shaft of *Shaft Assy Retard* (PL2.2.6) from the *Cassette Assy*.

Replacement

1. Align the position of *Clutch Assy Friction* with the shaft of *Shaft Assy Retard* (PL2.2.6) in the *Cassette Assy* (PL2.1.1).
2. Insert the *Clutch Assy Friction* into the shaft of *Shaft Assy Retard*.
3. Mount the *Roll Assy* (RRP 2.2.2).
4. Close the *Chute Retard* (PL2.2.4) together with *Chute Retard Base L* (PL2.2.3) and *Chute Retard Base R* (PL2.2.5) from the *Cassette Assy*.
5. Secure the *Chute Retard Base L* and *Chute Retard Base R* with the left and right latches from the *Cassette Assy*.
6. Mount the *Cassette Assy* to the printer (RRP 2.1.1).

RRP 2.2.2 Roll Assy (PL2.2.8)

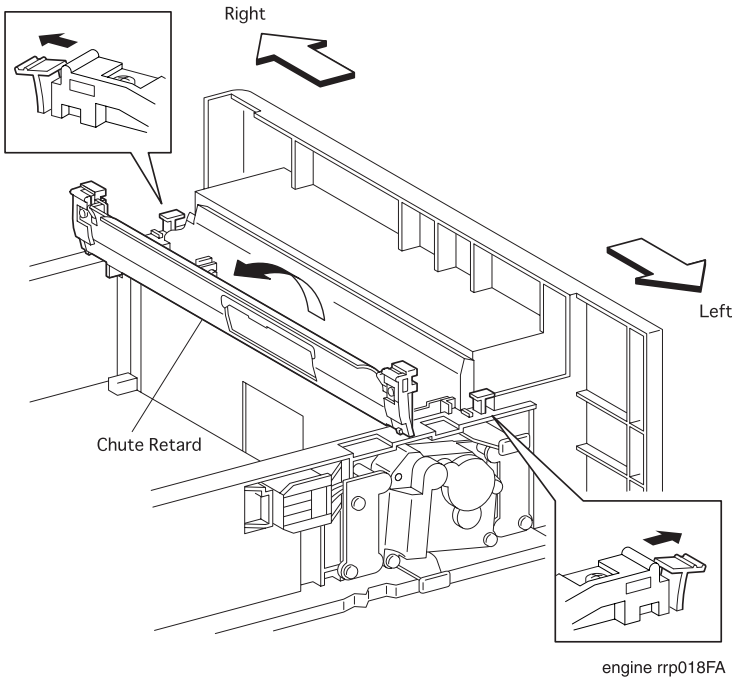

Figure 19. Roll Assy Removal(1)

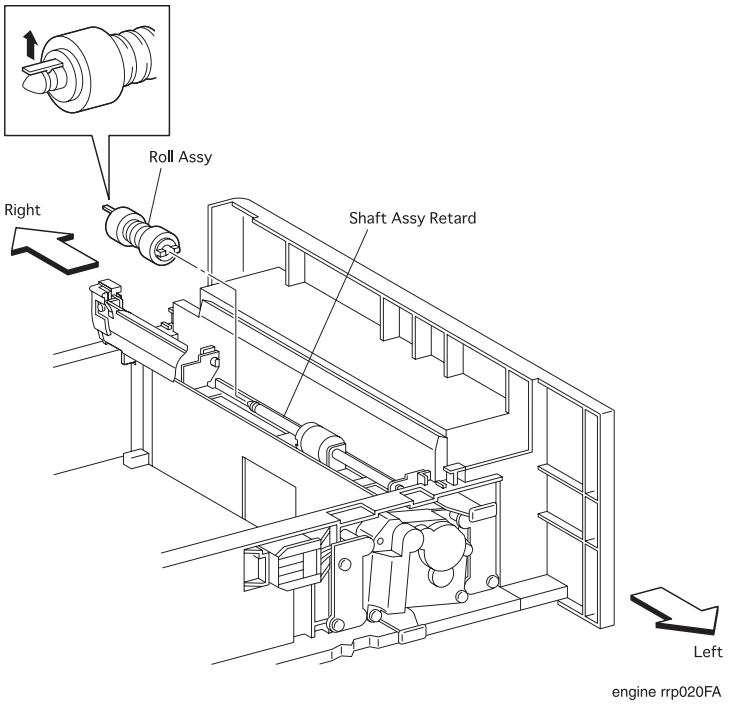

Figure 20. Roll Assy Removal(2)

RRP 2.2.2 Roll Assy (PL2.2.8) continued

Removal

1. Draw the *Cassette Assy* (PL2.1.1) from the printer.
2. Release the left and right latches of *Cassette Assy* that secures the *Chute Retard Base L* (PL2.2.3) and *Chute Retard Base R* (PL2.2.5) from the *Cassette Assy*.
3. Open the *Chute Retard* (PL2.2.4) together with *Chute Retard Base L* and *Chute Retard Base R* from the *Cassette Assy*.
4. Unhook the *Roll Assy* secured to the groove of *Shaft Assy Retard* (PL2.2.6) from the *Cassette Assy*.
5. Draw the *Roll Assy* from *Shaft Assy Retard*.

Replacement

1. Aligning the position exactly, mount the *Roll Assy* on the *Shaft Assy Retard* (PL2.2.6) in the *Cassette Assy* (PL2.1.1).
2. Hook the *Roll Assy* to the groove of *Shaft Assy Retard*.
3. Close the *Chute Retard* (PL2.2.4) together with *Chute Retard Base L* (PL2.23) and *Chute Retard Base R* (PL2.2.5) from the *Cassette Assy*.
4. Secure the *Chute Retard Base L* and *Chute Retard Base R* with the left and right latches of *Cassette Assy*.
5. Mount the *Cassette Assy* to the printer (RRP2.1.1).

RRP 2.2.3 Spring Retard (PL2.2.10)

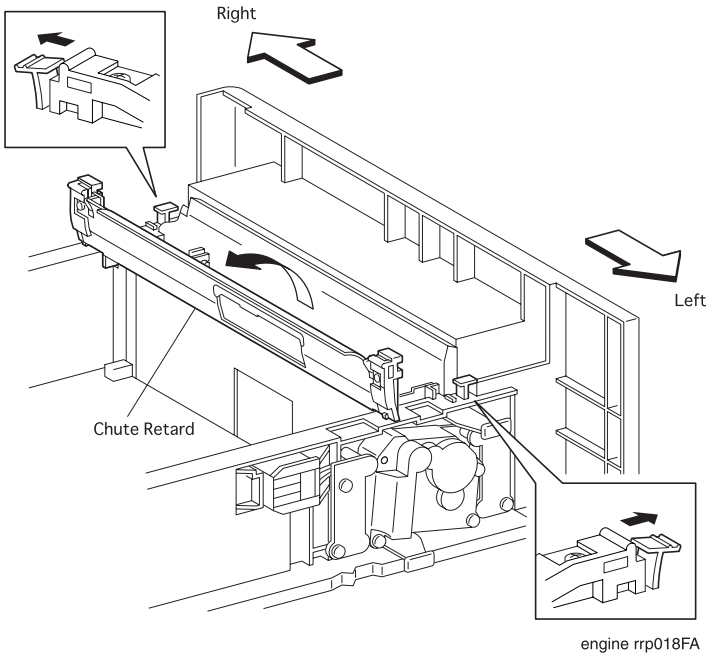

Figure 21. Spring Retard(1)

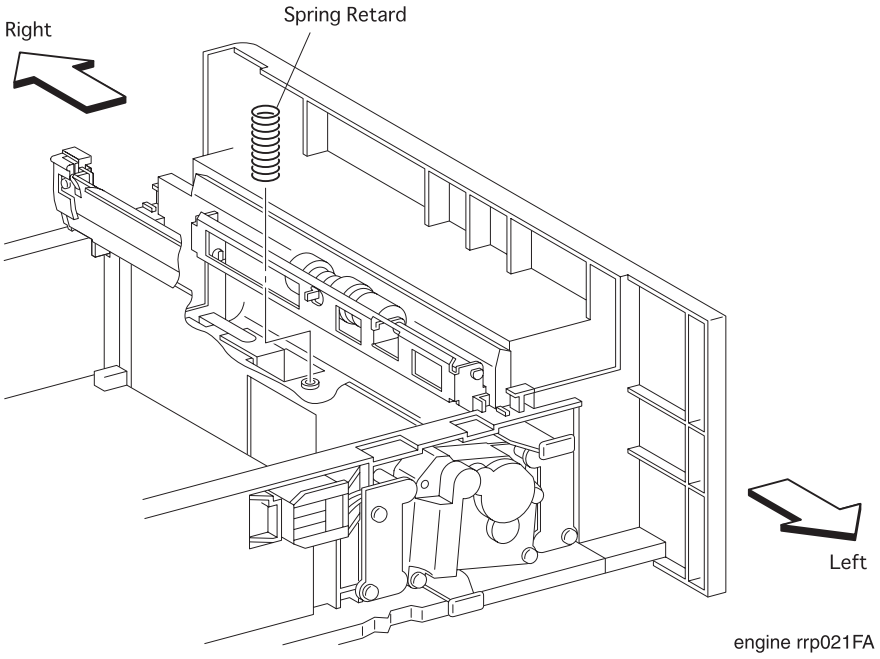

Figure 22. Spring Retard(2)

RRP 2.2.3 Spring Retard (PL2.2.10) continued

Removal

1. Draw the *Cassette Assy* (PL2.1.1) from the printer.
2. Release the left and right latches of *Cassette Assy* that secures the *Chute Retard Base L* (PL2.2.3) and *Chute Retard Base R* (PL2.2.5) from the *Cassette Assy* .
3. Open the *Chute Retard* (PL2.2.4) together with *Chute Retard Base L* and *Chute Retard Base R* from the *Cassette Assy*.
4. Open the *Bracket Retard* (PL2.2.9) from the *Cassette Assy*.
5. Remove the *Spring Retard* from the *Cassette Assy*.

Replacement

1. Align the *Spring Retard* with the specified mount position on the *Cassette Assy* (PL2.1.1), and mount the *Spring Retard* to the *Cassette Assy* (PL2.1.1).
2. Close the *Bracket Retard* (PL2.2.9) from the *Cassette Assy*.
3. Close the *Chute Retard* (PL2.2.4) together with *Chute Retard Base L* (PL2.23) and *Chute Retard Base R* (PL2.2.5) from the *Cassette Assy*.
4. Secure the *Chute Retard Base L* and *Chute Retard Base R* with the left and right latches from the *Cassette Assy*.
5. Mount the *Cassette Assy* to the printer (RRP 2.1.1).

RRP 2.2.4 Motor Assy (PL2.2.22)

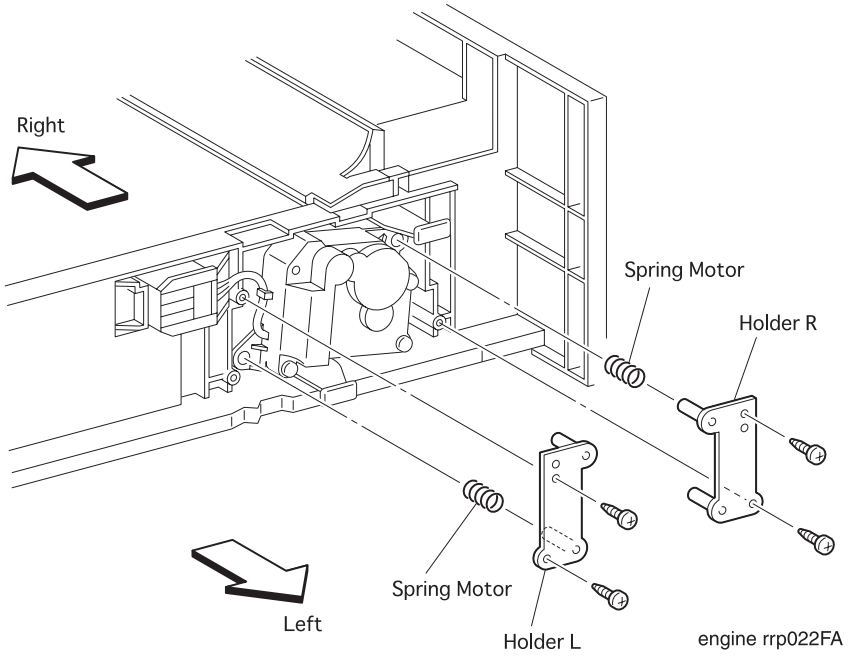

Figure 23. Motor Assy Removal(1)

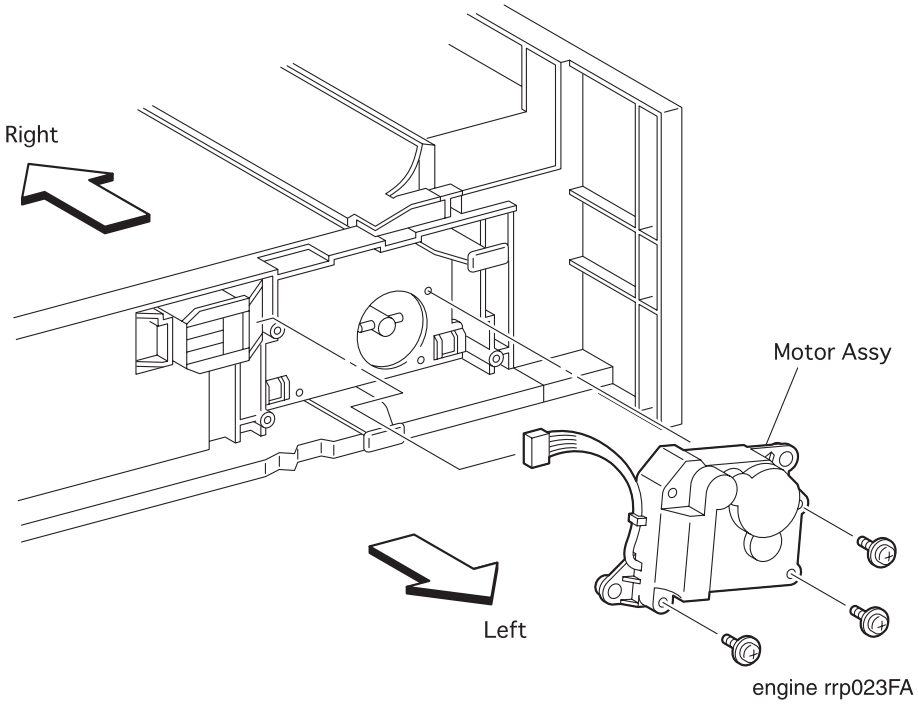

Figure 24. Motor Assy Removal(2)

RRP 2.2.4 Motor Assy (PL2.2.22) continued

Removal

1. Draw the *Cassette Assy* (PL2.1.1) from the printer.

NOTE

In the following steps, take care not to drop and miss the *Spring Motor* (PL2.2.19).

2. Remove the two screws securing the *Holder L* (PL2.2.21) to the *Cassette Assy*.
3. Remove the *Spring Motor*(PL2.2.19) with Holder L from the *Cassette Assy*.
4. Remove the two screws securing the *Holder R* (PL2.2.20) to the *Cassette Assy*.
5. Remove the *Spring Motor* with Holder R from the *Cassette Assy*.
6. Unplug the connector (P/J673) of the *Motor Assy* from the *Connector* (PL2.2.25) of *Cassette Assy*.
7. Remove the three screws securing the *Motor Assy* to the *Cassette Assy*.
8. Remove the *Motor Assy* from the *Cassette Assy*.

Replacement

1. Engaging the groove at a rotational part of *Motor Assy* with the boss of *Shaft Assy Tongue* (PL2.2.12), mount the *Motor Assy* on the *Cassette Assy* (PL2.1.1).
2. Secure the *Motor Assy* to the *Cassette Assy* with three screws.
3. Plug the connector (P/J673) of the *Motor Assy* from the *Connector* (PL2.2.25) of *Cassette Assy*.

NOTE

In the following steps, take care not to drop and miss the *Spring Motor* (PL2.2.19).

4. Adjust the *Holder R*(PL2.2.20) with *Spring Motor*(PL2.2.19) to the replacement position of the *Cassette Assy*.
5. Fix the *Holder R* to the *Cassette Assy*(two screws).
6. Adjust the *Holder L*(PL2.2.21) with *Spring Motor* to the replacement position of the *Cassette Assy*.
7. Fix the *Holder L* to the *Cassette Assy*(two screws).
8. Mount the *Cassette Assy* to the printer (RRP 2.1.1).

RRP 2.2.5 Connector(PL2.2.25) and Guide Socket(PL2.2.27)

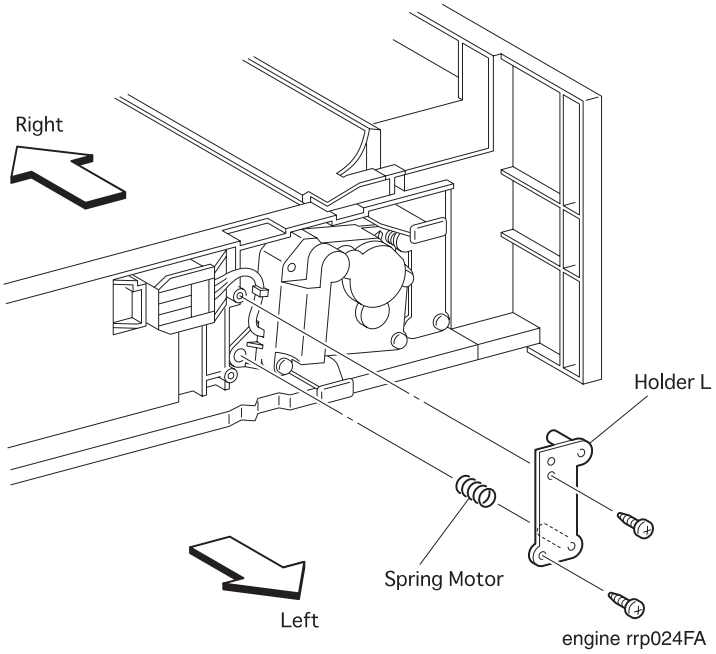

Figure 25. Connector and Guide Socket Removal(1)

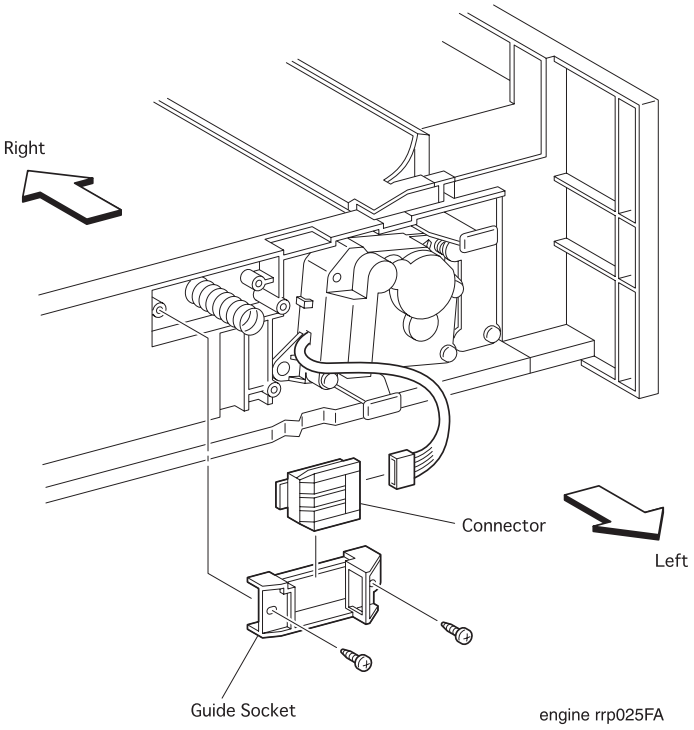

Figure 26. Connector Guide Socket Removal(2)

RRP 2.2.5 Connector(PL2.2.25) and Guide Socket(PL2.2.27) continued

Removal

1. Draw the *Cassette Assy* (PL2.1.1) from the printer.

NOTE

In the following steps, take care not to drop and miss the *Spring Motor* (PL2.2.19).

2. Remove the two screws securing the *Holder L* (PL2.2.21) to the *Cassette Assy*.
3. Remove the *Spring Motor*(PL2.2.19) with Holder L from the *Cassette Assy*.

NOTE

In the following steps, take care not to drop and miss the *Spring* (PL2.2.26).

4. Unplug the connector (P/J673) of the *Motor Assy* (PL2.2.22)from the *Connector*.
5. Remove the two screws securing the *Guide Socket* to the *Cassette Assy*.
6. Remove the *Guide Socket* together with *Connector* from the *Cassette Assy*.
7. Remove the *Spring* (RRP 2.2.26).
8. Sliding the *Connector* upward, disconnect it from the *Guide Socket*.

Replacement

1. Aligning the *Connector* with the rail of *Guide Socket*, slide the *Connector* downward to connect.

NOTE

In the following steps, take care not to drop and miss the *Spring* (PL2.2.26).

2. Mount the *Spring* (RRP 2.2.26).
3. Aligning the position exactly, mount the *Guide Socket* together with *Connector* on the *Cassette Assy*.
4. Secure the *Guide Socket* to the *Cassette Assy* with two screws.

NOTE

In the following steps, take care not to drop and miss the *Spring Motor* (PL2.2.19).

5. Plug the connector (P/J673) of the *Motor Assy* (PL2.2.22)to the *Connector*.
6. Aligning the position exactly, mount the *Holder L* together with *Spring Motor* to the *Cassette Assy*.
7. Secure the *Holder L* to the *Cassette Assy* with two screws.
8. Mount the *Cassette Assy* to the printer (RRP 2.1.1).

RRP 2.2.6 Spring (PL2.2.26)

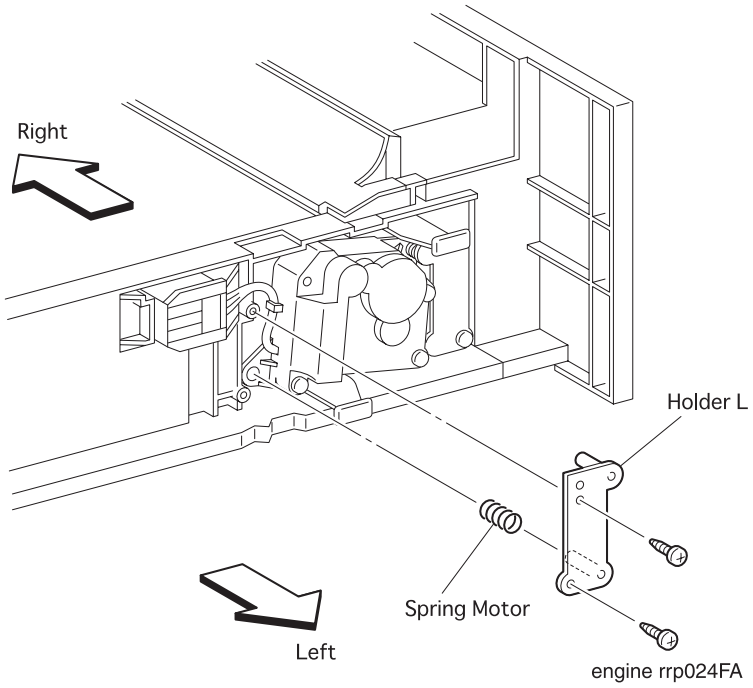

Figure 27. Spring Removal(1)

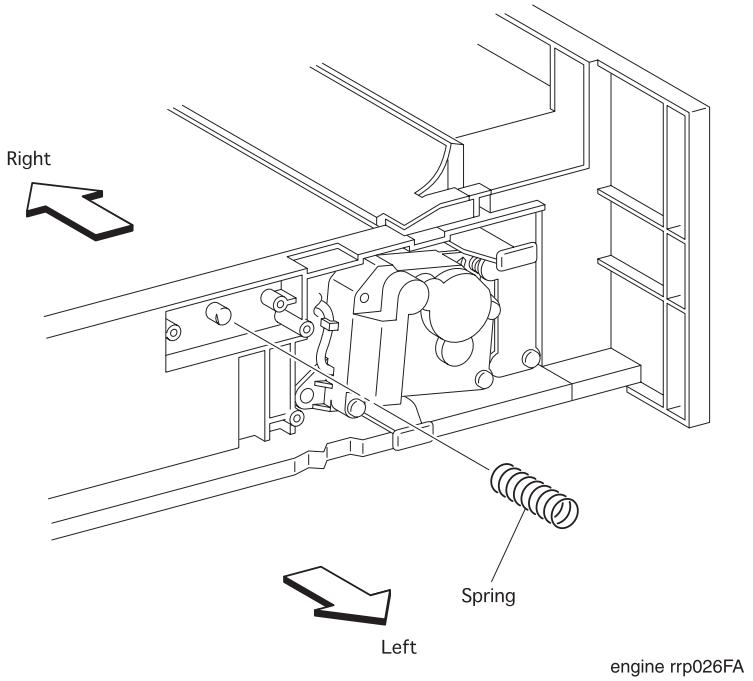

Figure 28. Spring Removal(2)

RRP 2.2.6 Spring (PL2.2.26) continued

Removal

1. Draw the *Cassette Assy* (PL2.1.1) from the printer.

NOTE

In the following steps, take care not to drop and miss the *Spring Motor* (PL2.2.19).

2. Remove the two screws securing the *Holder L* (PL2.2.21) to the *Cassette Assy*.
3. Remove the *Spring Motor*(PL2.2.19) with Holder L from the *Cassette Assy*.

NOTE

In the following steps, take care not to drop and miss the *Spring* (PL2.2.26).

4. Remove the *Guide Socket* (RRP 2.2.5).
5. Remove the *Spring* from the *Cassette Assy*.

Replacement

NOTE

In the following steps, take care not to drop and miss the *Spring* (PL2.2.26).

1. Mount a *Spring* to the boss of *Cassette Assy* (PL2.1.1).
2. Mount the *Guide Socket* (RRP 2.2.5).

NOTE

In the following steps, take care not to drop and miss the *Spring Motor* (PL2.2.19).

3. Aligning the position exactly, mount the *Holder L* together with *Spring Motor* to the *Cassette Assy*.
4. Secure the *Holder L* to the *Cassette Assy* with two screws.
5. Mount the *Cassette Assy* to the printer (RRP2.1.1).

RRP 3.1.1 Roll Assy Turn (PL3.1.1)

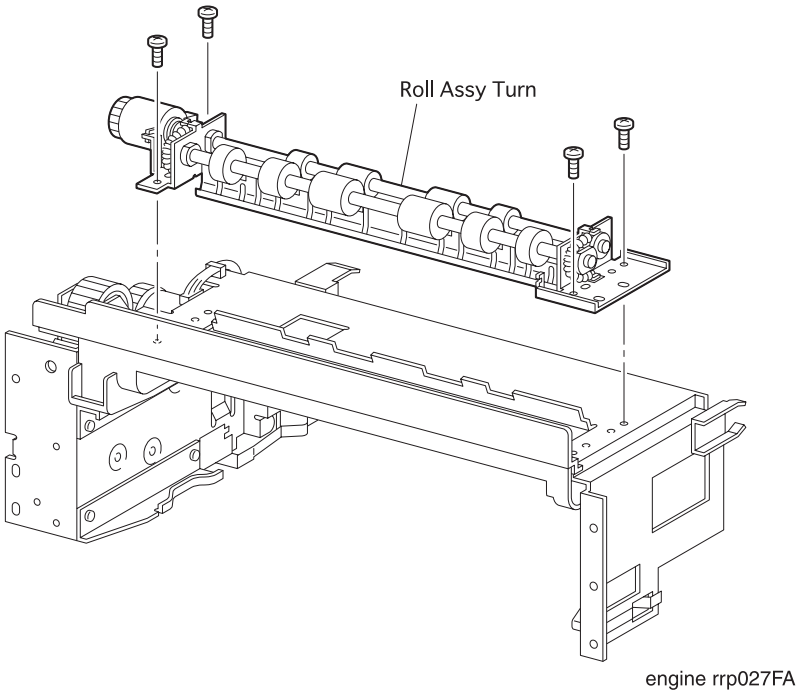

Figure 29. Roll Assy Turn Removal(1)

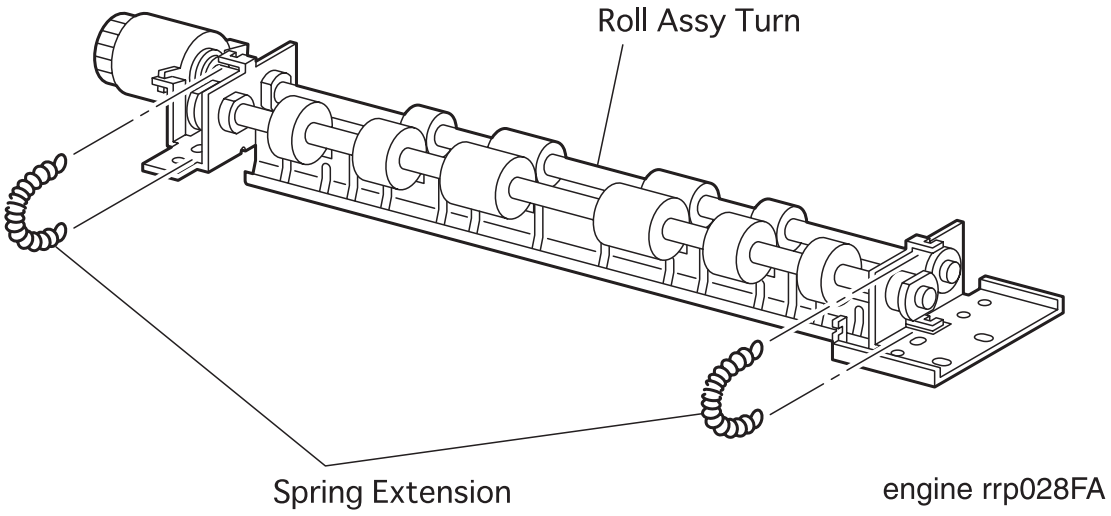

Figure 30. Roll Assy Turn Removal(2)

RRP 3.1.1 Roll Assy Turn (PL3.1.1) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Cover Assy L/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Cover Right* (RRP 1.1.7).
8. Remove the *Plate Assy Left* (RRP 9.1.1).
9. Remove the *Plate Handle* (RRP 9.1.3).
10. Remove the *PWBA HKB PS* (RRP 10.1.9).
11. Remove the *Feeder* (RRP 3.1.10).
12. Unplug the connector (P/J641)on the *Clutch Assy Turn* (PL3.1.2) from the *Feeder*.
13. Remove the four screws securing the *Roll Assy Turn* to the Feeder.
14. Remove the *Roll Assy Turn* together with *Spring Extension* (PL3.1.3) and *Spring Chute* (PL3.1.4) from the Feeder.
15. Remove the *Spring Chute* (RRP 3.1.2).
16. Unhook the left *Spring Extension* from two notches of *Roll Assy Turn*, and remove the *Spring Extension*.
17. Unhook the right *Spring Extension* from two notches of *Roll Assy Turn*, and remove the *Spring Extension*.

RRP 3.1.1 Roll Assy Turn (PL3.1.1) continued

Replacement

1. Hook the *Spring Extension* (PL3.1.3) to two notches on the right side of *Roll Assy Turn* to secure the *Spring Extension* to the *Roll Assy Turn*.
2. Hook the *Spring Extension* (PL3.1.3) to two notches on the left side of *Roll Assy Turn* to secure the *Spring Extension* to the *Roll Assy Turn*.
3. Mount the *Spring Chute* (RRP 3.1.2).
4. Align the *Roll Assy Turn*, together with the *Spring Extension* and *Spring Chute*, to the *Feeder*.
5. Secure the *Roll Assy Turn* to the *Feeder* with four screws.
6. Plug the connector (P/J641) to the *Clutch Assy Turn* (PL3.1.12) from the *Feeder*.
7. Mount the *Feeder* (RRP 3.1.10).
8. Mount the *PWBA HKB PS* (RRP 10.1.9).
9. Mount the *Plate Handle* (RRP 9.1.3).
10. Mount the *Plate Assy Left* (RRP 9.1.1).
11. Mount the *Cover Right* (RRP 1.1.7).
12. Mount the *Cover Assy Top* (RRP 1.1.4).
13. Mount the *Cover Left* (RRP 1.1.1).
14. Mount the *Cover Assy I/F* (RRP 1.1.2).
15. Mount the *Chute MBF Assy* (RRP 4.1.1).
16. Mount the *Cover Front L/H* (RRP 1.1.10).
17. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 3.1.1 Roll Assy Turn (PL3.1.1) continued

Blank Page

RRP 3.1.2 Spring Chute (PL3.1.4)

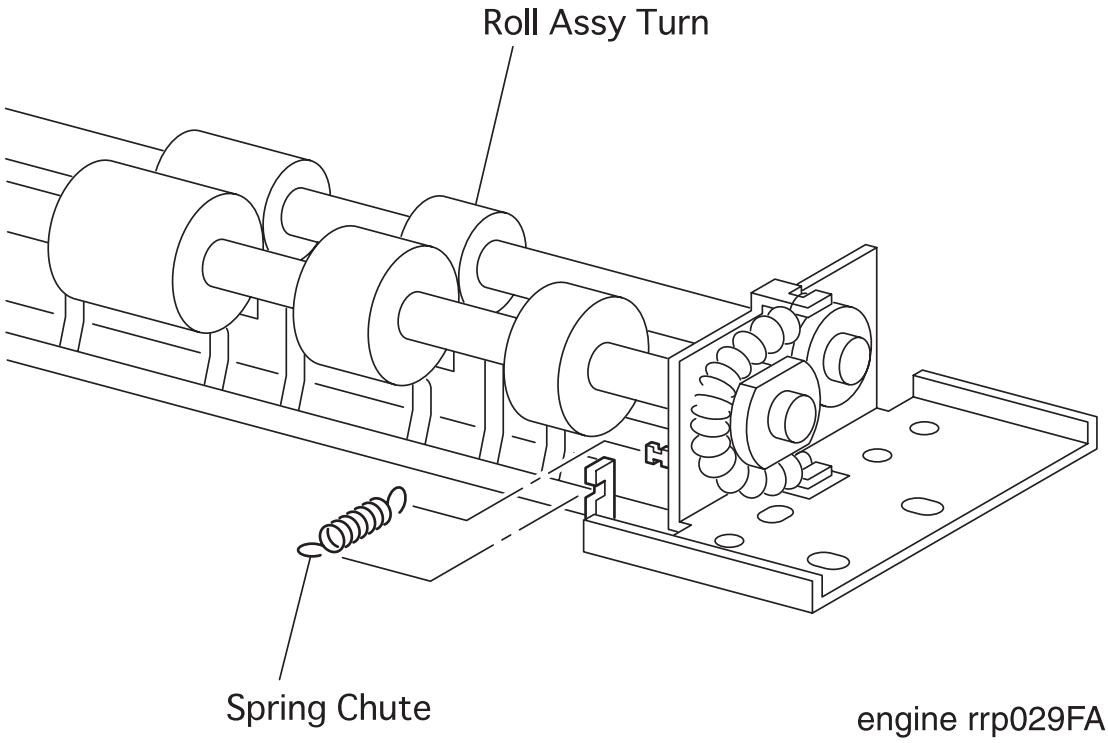

Figure 31. Spring Chute Removal

RRP 3.1.2 Spring Chute (PL3.1.4) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Cover Right* (RRP 1.1.7).
8. Remove the *Plate Assy Left* (RRP 9.1.1).
9. Remove the *Plate Handle* (RRP 9.1.3).
10. Remove the *PWBA HKB PS* (RRP 10.1.9).
11. Remove the *Feeder* (RRP 3.1.10).
12. Unplug the connector (P/J641)on the *Clutch Assy Turn* (PL3.1.2) from the *Feeder*.
13. Remove the four screws securing the *Roll Assy Turn* (PL3.1.1) to the *Feeder*.
14. Remove the *Roll Assy Turn* together with *Spring Extension* (PL3.1.3) and *Spring Chute* (PL3.1.4) from the *Feeder*.
15. Unhook the *Spring Chute* securing to the *Roll Assy Turn* at two places, and remove the *Spring Chute*.

Replacement

1. Hook the *Spring Chute* to the boss of the right Chute of the *Roll Assy Turn* (PL3.1.1).
2. Hook the *Spring Chute* to the notch of the right bracket of the *Roll Assy Turn*.
3. Aligning the position exactly, mount the *Roll Assy Turn* together with *Spring Extension* (PL3.1.3) and *Spring Chute* to the *Feeder*.
4. Secure the *Roll Assy Turn* to the *Feeder* with four screws.
5. Plug the connector (P/J641) to the *Clutch Assy Turn* (PL 3.1.12) from the *Feeder*.
6. Mount the *PWBA HKB PS* (RRP 10.1.9).
7. Mount the *Feeder* (RRP 3.1.10).
8. Mount the *Plate Handle* (RRP 9.1.3).
9. Mount the *Plate Assy Left* (RRP 9.1.1).
10. Mount the *Cover Right* (RRP 1.1.7).
11. Mount the *Cover Assy Top* (RRP 1.1.4).
12. Mount the *Cover Left* (RRP 1.1.1).
13. Mount the *Cover Assy I/F* (RRP 1.1.2).
14. Mount the *Chute MBF Assy* (RRP 4.1.1).
15. Mount the *Cover Front L/H* (RRP 1.1.10).
16. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 3.1.3 Actuator N/P (PL3.1.6)

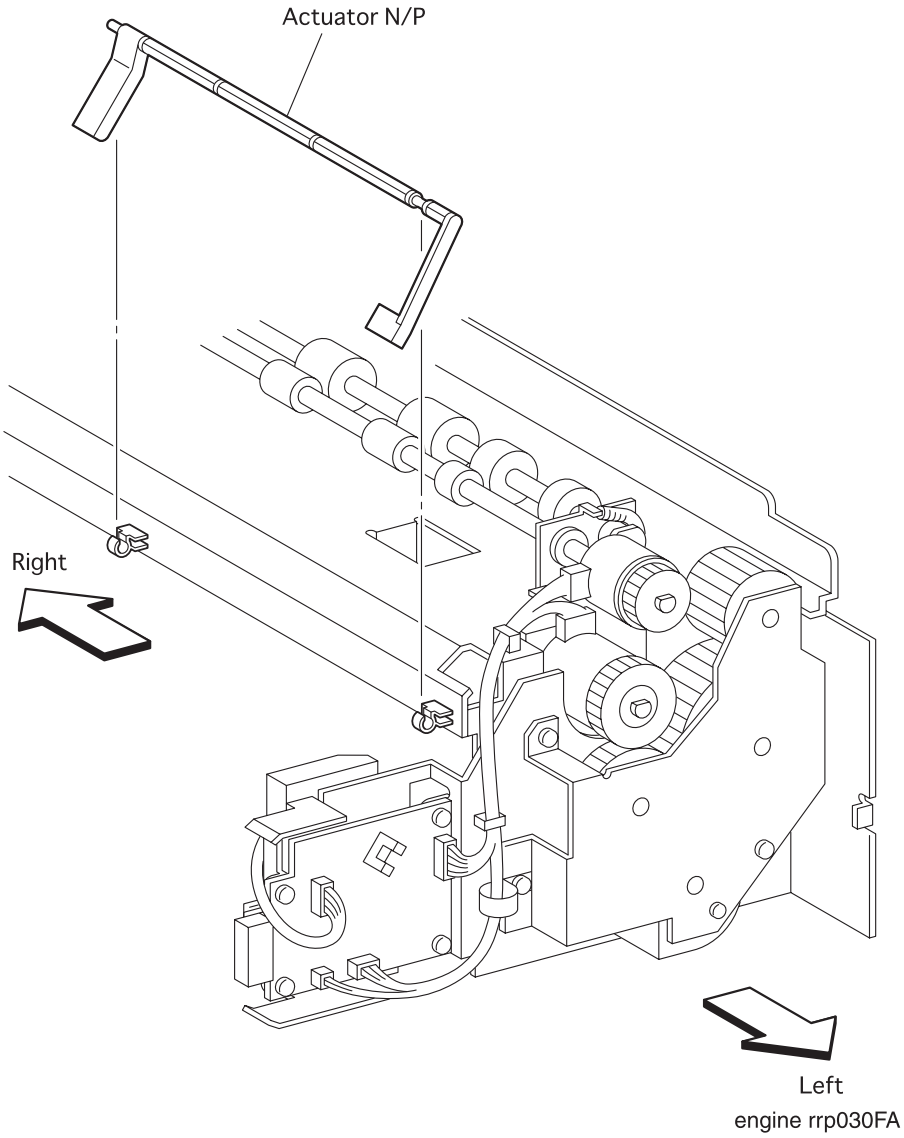

Figure 32. Actuator N/P Removal

RRP 3.1.3 Actuator N/P (PL3.1.6) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Cover Assy L/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Cover Right* (RRP 1.1.7).
8. Remove the *Plate Assy Left* (RRP 9.1.1).
9. Remove the *Plate Handle* (RRP 9.1.3).
10. Remove the *PWBA HKB PS* (RRP 10.1.9).
11. Remove the *Feeder* (RRP 3.1.10).
12. Unhook the left and right shafts of *Actuator N/P* from the left and right *Support Actuators* (PL3.1.7), and remove the *Actuator N/P* from the *Feeder*.

Replacement

1. Aligning the position exactly, mount the *Actuator N/P* on the left and right *Support Actuators* (PL3.1.7) of *Feeder*.
2. Insert the left and right shafts of *Actuator N/P* into the *Support Actuator*.
3. Mount the *Feeder* (RRP 3.1.10).
4. Mount the *PWBA HKB PS* (RRP 10.1.9).
5. Mount the *Plate Handle* (RRP 9.1.3).
6. Mount the *Plate Assy Left* (RRP 9.1.1).
7. Mount the *Cover Right* (RRP 1.1.7).
8. Mount the *Cover Assy Top* (RRP 1.1.4).
9. Mount the *Cover Left* (RRP 1.1.1).
10. Mount the *Cover Assy I/F* (RRP 1.1.2).
11. Mount the *Chute MBF Assy* (RRP 4.1.1).
12. Mount the *Cover Front L/H* (RRP 1.1.10).
13. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 3.1.4 Sensor Photo:Face Control,Low Paper (PL3.1.13)

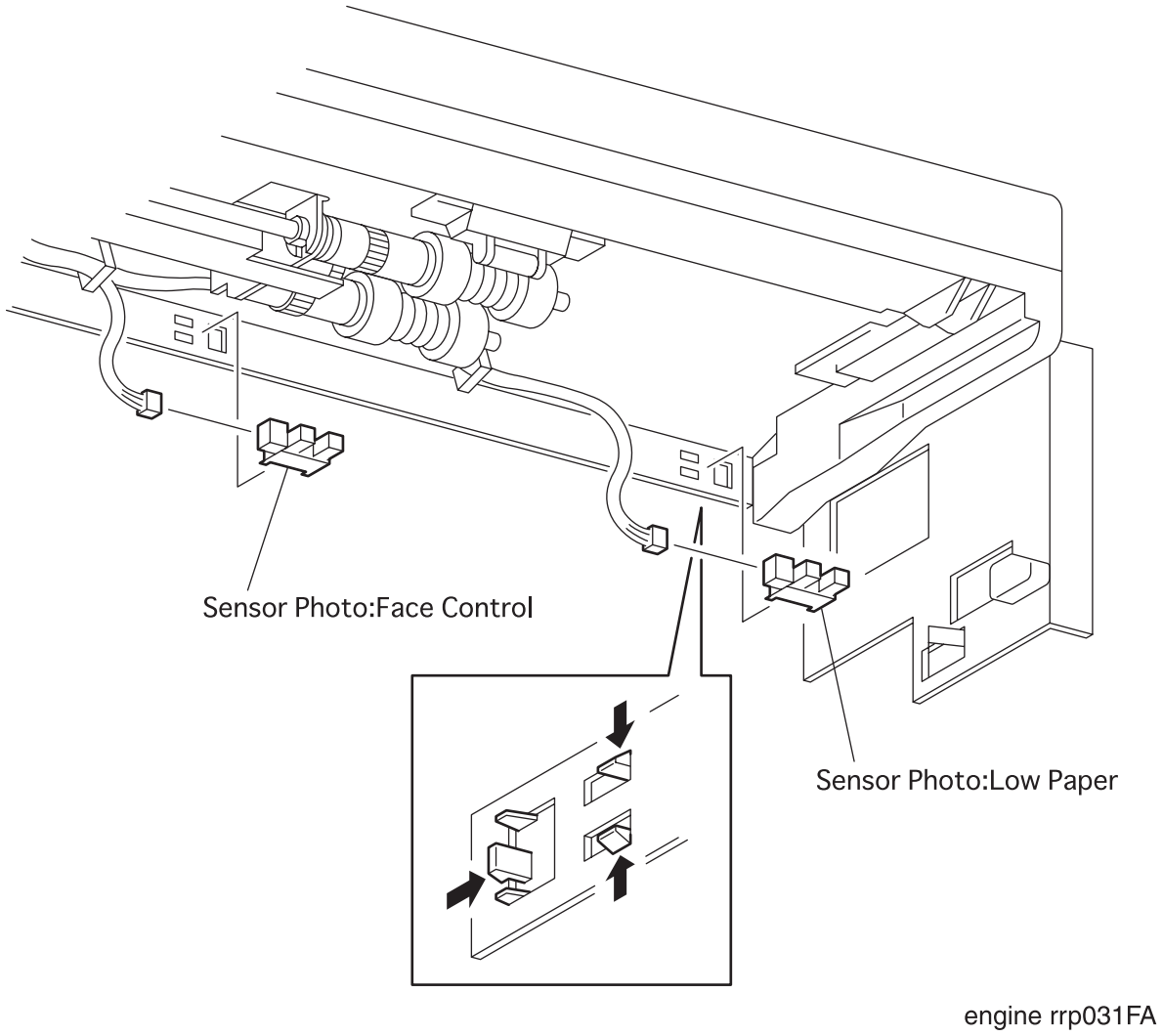

Figure 33. Sensor Photo:Face Control Paper Removal

RRP 3.1.4 Sensor Photo:Face Control,Low Paper (PL3.1.13) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Cover Right* (RRP 1.1.7).
8. Remove the *Plate Assy Left* (RRP 9.1.1).
9. Remove the *Plate Handle* (RRP 9.1.3).
10. Remove the *PWBA HKB PS* (RRP 10.1.9).
11. Remove the *Feeder* (RRP 3.1.10).
12. Unplug the connector (P/J662) on the left *Sensor Photo: Face Control* from the *Feeder*.
13. Disengage five hooks of left *Sensor Photo: Face Control* from the *Feeder*, and remove the *Sensor Photo: Face Control*.
14. Unplug the connector (P/J661) on the right *Sensor Photo:Low Paper* from the *Feeder*.
15. Disengage five hooks of right *Sensor Photo:Low Paper* from the *Feeder*, and remove the *Sensor Photo:Low Paper*.

Replacement

1. Secure the *Sensor Photo:Low Paper* to the mounting hole on the right side of *Feeder* with five hooks.
2. Plug the connector (P/J611) to the right *Sensor Photo:Low Paper* from the *Feeder*.
3. Secure the *Sensor Photo: Face Control* to the mounting hole on the left side of *Feeder* with five hooks.
4. Plug the connector (P/J662) to the left *Sensor Photo: Face Control* from the *Feeder*.
5. Mount the *Feeder* (RRP 3.1.10).
6. Mount the *PWBA HKB PS* (RRP 10.1.9).
7. Mount the *Plate Handle* (RRP 9.1.3).
8. Mount the *Plate Assy Left* (RRP 9.1.1).
9. Mount the *Cover Right* (RRP 1.1.7).
10. Mount the *Cover Assy Top* (RRP 1.1.4).
11. Mount the *Cover Left* (RRP 1.1.1).
12. Mount the *Cover Assy I/F* (RRP 1.1.2).
13. Mount the *Chute MBF Assy* (RRP 4.1.1).
14. Mount the *Cover Front L/H* (RRP 1.1.10).
15. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 3.1.5 Feeder Assy (PL3.1.19)

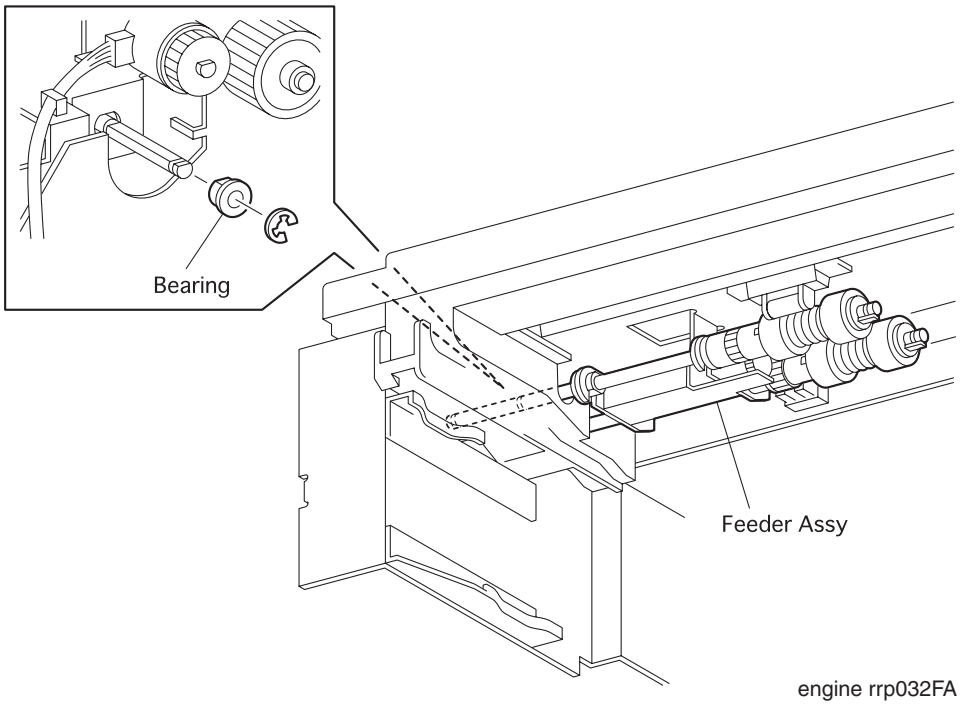

Figure 34. Feeder Assy Removal(1)

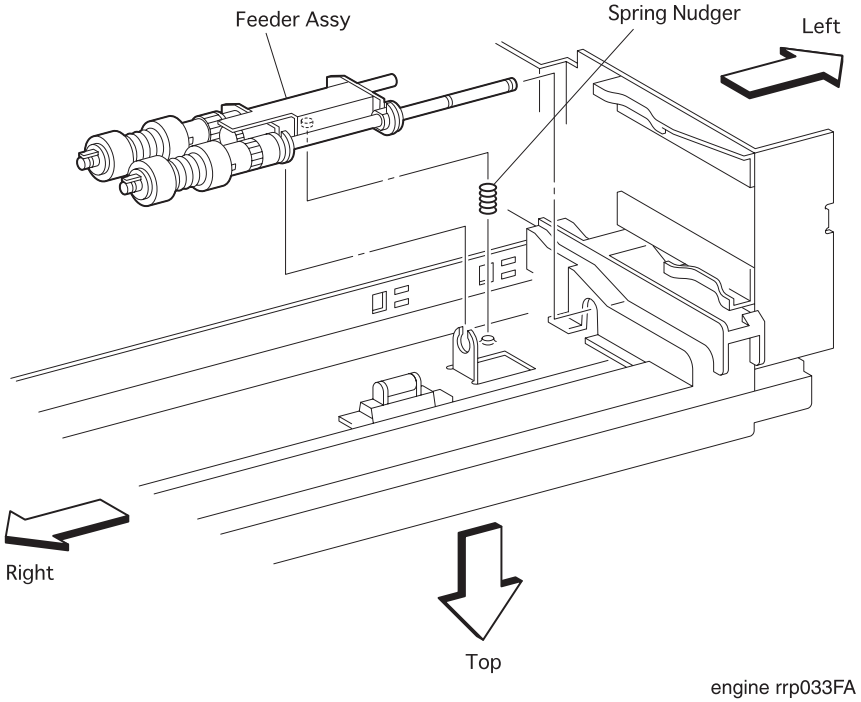

Figure 35. Feeder Assy Removal(2)

RRP 3.1.5 Feeder Assy (PL3.1.19) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Cover Right* (RRP 1.1.7).
8. Remove the *Plate Assy Left* (RRP 9.1.1).
9. Remove the *Plate Handle* (RRP 9.1.3).
10. Remove the *PWBA HKB PS* (RRP 10.1.9).
11. Remove the *Feeder* (RRP 3.1.10).
12. Remove the *Clutch Assy Feed* (RRP 3.1.8)
13. Remove the *Sensor Photo:Face Control* (RRP 3.1.4).
14. Disengage the E-ring that secures the left shaft of *Feeder Assy* to the *Feeder*.

NOTE

In the following steps, place thick paper under the *Feeder* to protect the *Roll of Roll Assy Turn* (PL3.1.1) from damage.

NOTE

In the following steps, take care not to drop and lose the *Spring Nudger* (PL3.1.29).

15. Reverse the *Feeder so that the top surface faces down.*
16. Draw the *Bearing* (PL3.1.38) securing the left shaft of *Feeder Assy* to the *Feeder*.
17. Sliding the *Feeder Assy* to the right, draw the shaft of *Feeder Assy* from the left bearing bore of the *Feeder*, and remove the *Feeder Assy* from the *Feeder*.
18. Remove the *Spring Nudger* (PL3.1.29) from the boss of *Feeder*.

RRP 3.1.5 Feeder Assy (PL3.1.19) continued

Replacement

NOTE

In the following steps, take care not to drop and lose the *Spring Nudger* (PL3.1.29).

1. Align the position exactly, mount the *Spring Nudger* (PL3.1.29) on the boss of *Feeder*.

NOTE

In the following steps, align the *Feeder Assy* position so that the leading end of *Spring Nudger* enters the boss of *Feeder Assy.*

2. Insert the lead edge of left shaft of *Feeder Assy* into the left bearing bore of *Feeder*, and slide the *Feeder Assy* to the left.
3. Secure the left shaft of *Feeder Assy* to the *Feeder* with the *Bearing* (PL3.1.38).
4. Restore the reversed *Feeder* so that the top surface faces up.
5. Secure the left shaft of *Feeder Assy* to the *Feeder* with the E-ring.
6. Mount the *Clutch Assy Feed* (RRP 3.1.8).
7. Mount the *Feeder* (RRP 3.1.10).
8. Mount the *PWBA HKB PS* (RRP 10.1.9).
9. Mount the *Plate Handle* (RRP 9.1.3).
10. Mount the *Plate Assy Left* (RRP 9.1.1).
11. Mount the *Cover Right* (RRP 1.1.7).
12. Mount the *Cover Assy Top* (RRP 1.1.4).
13. Mount the *Cover Left* (RRP 1.1.1).
14. Mount the *Cover Assy I/F* (RRP 1.1.2).
15. Mount the *Chute MBF Assy* (RRP 4.1.1).
16. Mount the *Cover Front L/H* (RRP 1.1.10).
17. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 3.1.5 Feeder Assy (PL3.1.19) continued

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RRP 3.1.6 Roll Assy (PL3.1.26)

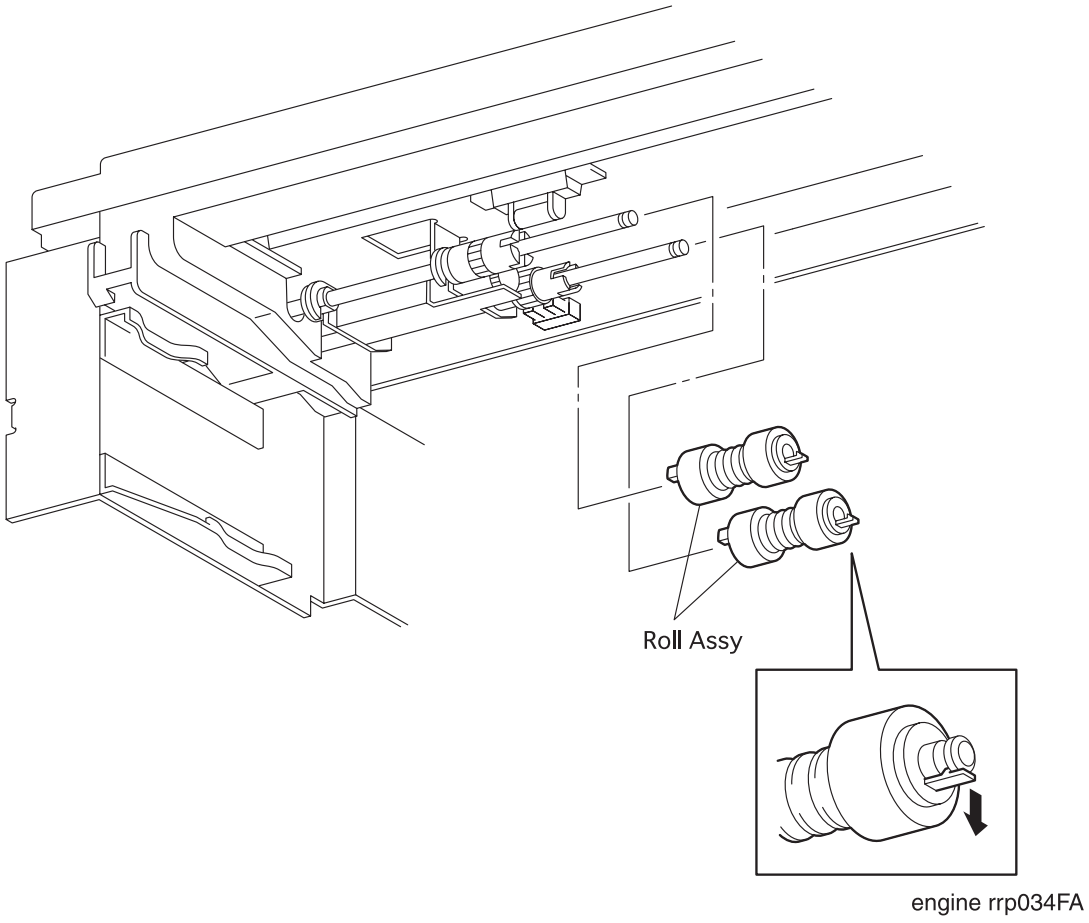

Figure 36. Roll Assy Removal

RRP 3.1.6 Roll Assy (PL3.1.26) continued

Removal

1. Draw the *Cassette Assy* (PL2.1.1) from the printer.
2. Unhook the *Roll Assy* secured to the front shaft of *Feeder Assy* (PL3.1.19) in the *Feeder*.
3. Draw the *Roll Assy* from the front shaft of *Feeder Assy*.
4. Unhook the *Roll Assy* secured to the rear shaft of *Feeder Assy* from the *Feeder*.
5. Draw the *Roll Assy* from the rear shaft of *Feeder Assy*.

Replacement

1. Insert the *Roll Assy* into the rear shaft of *Feeder Assy* (PL3.1.19) from the *Feeder*.
2. Hook the *Roll Assy* to the groove in the rear shaft of *Feeder Assy* to secure.
3. From the *Feeder*, insert the *Roll Assy* into the front shaft of *Feeder Assy*.
4. Hook the *Roll Assy* to the groove in the front shaft of *Feeder Assy* to secure.
5. Mount the *Cassette Assy* (RRP 2.1.1).

RRP 3.1.7 PWBA Feeder (PL3.1.36)

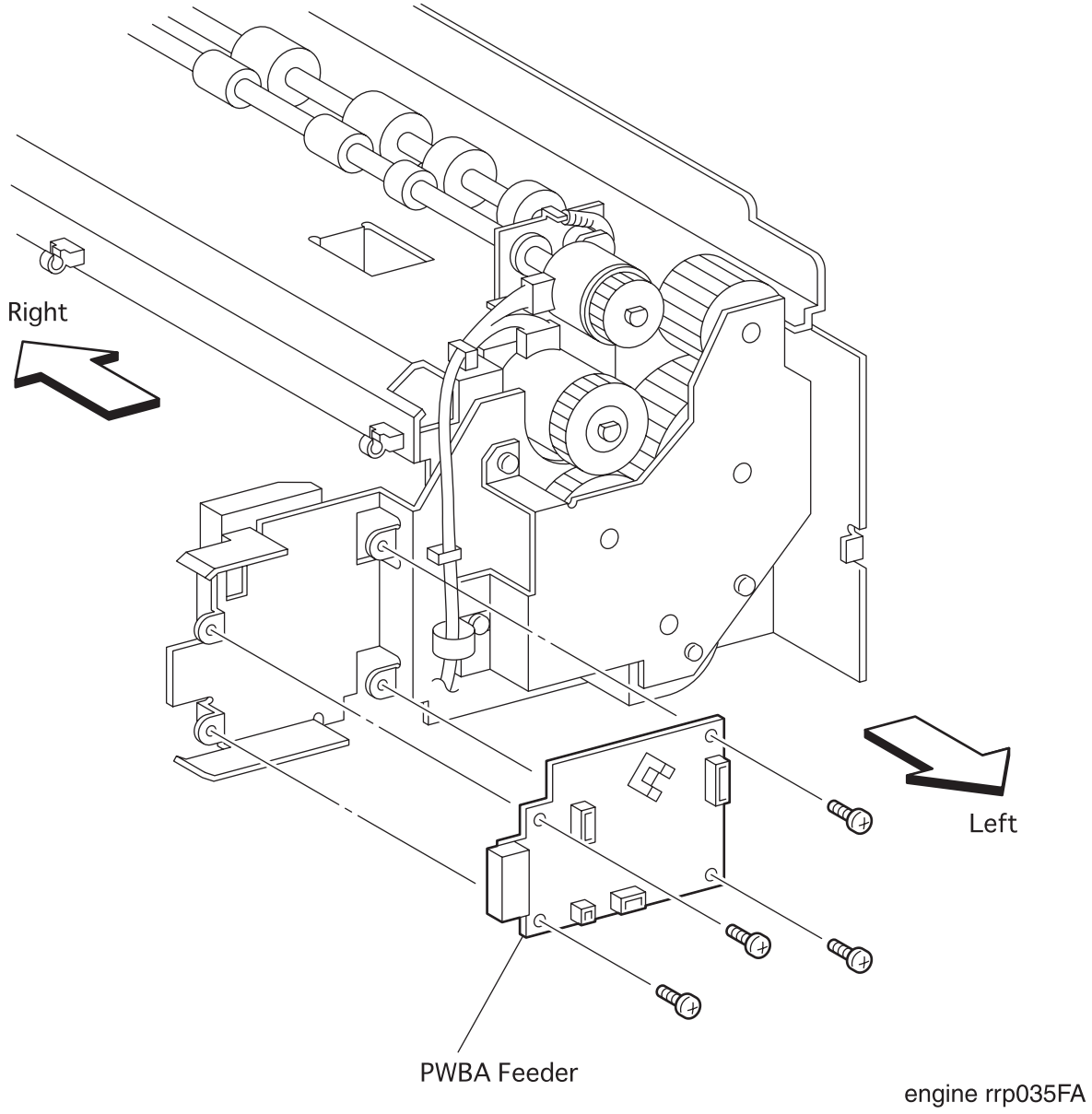

Figure 37. PWBA Feeder Removal

RRP 3.1.7 PWBA Feeder (PL3.1.36) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Cover Right* (RRP 1.1.7).
8. Remove the *Plate Assy Left* (RRP 9.1.1).
9. Remove the *Plate Handle* (RRP 9.1.3).
10. Remove the *PWBA HKB PS* (RRP 10.1.9).
11. Remove the *Feeder* (RRP 3.1.10).
12. Unplug the connector (P/J64) on the *PWBA Feeder* from the *Feeder*.
13. Unplug the connector (P/J65) on the *PWBA Feeder* from the *Feeder*.
14. Unplug the connector (P/J66) on the *PWBA Feeder* from the *Feeder*.
15. Unplug the connector (P/J67) on the PWBA Feeder from the *Feeder*.
16. Remove the four screws securing the *PWBA Feeder* to the *Feeder*.
17. Remove the *PWBA Feeder* from the *Feeder*.

RRP 3.1.7 PWBA Feeder (PL3.1.36) continued

Replacement

1. Align the *PWBA Feeder* with its mount position to the *Feeder*.
2. Secure the *PWBA Feeder* to the *Feeder* with four screws.
3. Plug the connector (P/J64) to the *PWBA Feeder*.
4. Plug the connector (P/J65) to the *PWBA Feeder*.
5. Plug the connector (P/J66) to the *PWBA Feeder*.
6. Plug the connector (P/J67) to the *PWBA Feeder*.
7. Mount the *Feeder* (RRP 3.1.10).
8. Mount the *PWBA HKB PS* (RRP 10.1.9).
9. Mount the *Plate Handle* (RRP 9.1.3).
10. Mount the *Plate Assy Left* (RRP 9.1.1).
11. Mount the *Cover Right* (RRP 1.1.7).
12. Mount the *Cover Assy Top* (RRP 1.1.4).
13. Mount the *Cover Left* (RRP 1.1.1).
14. Mount the *Cover Assy I/F* (RRP 1.1.2).
15. Mount the *Chute MBF Assy* (RRP 4.1.1).
16. Mount the *Cover Front L/H* (RRP 1.1.10).
17. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 3.1.7 PWBA Feeder (PL3.1.36) continued

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RRP 3.1.8 Clutch Assy Feed (PL3.1.37)

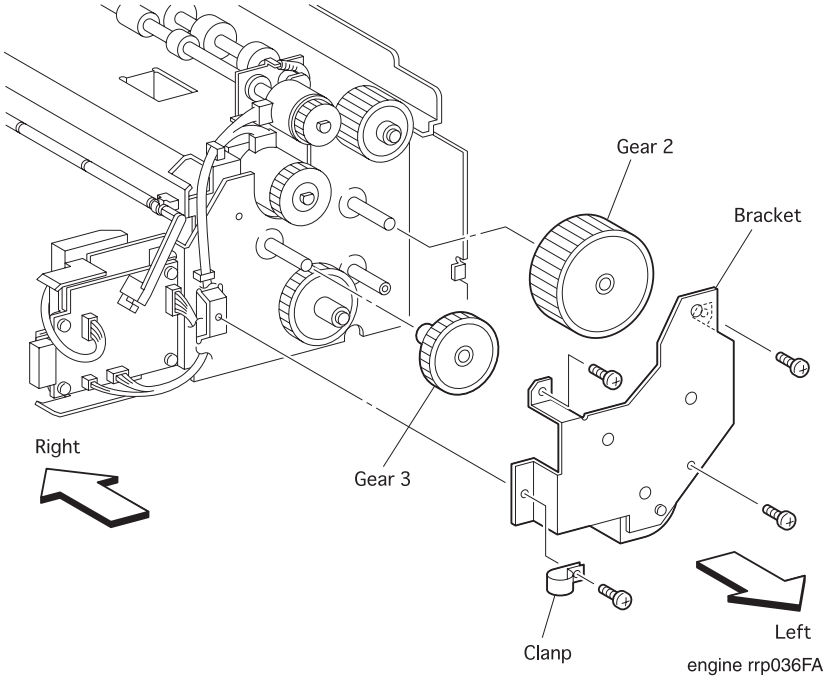

Figure 38. Clutch Assy Feed Removal(1)

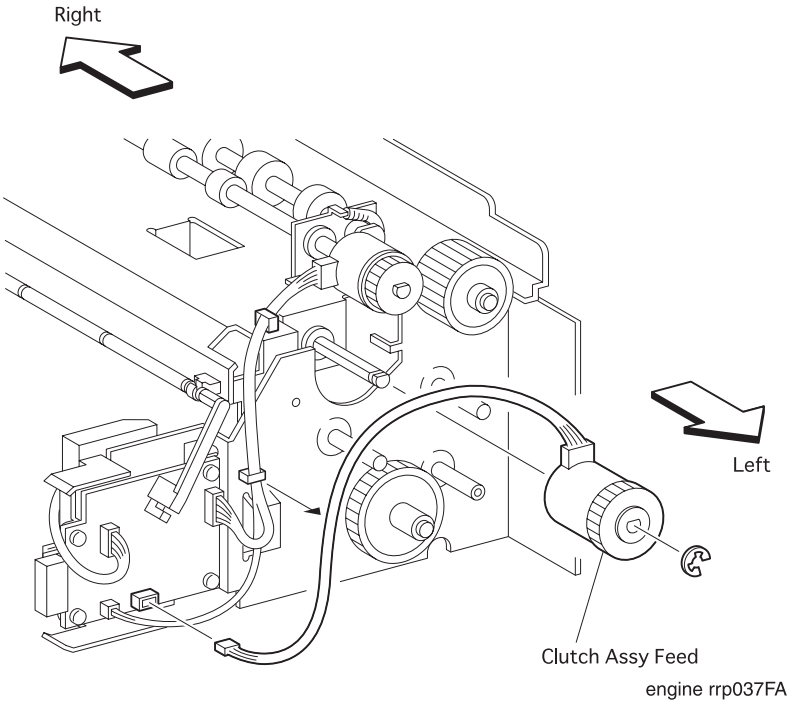

Figure 39. Clutch Assy Feed Removal(2)

RRP 3.1.8 Clutch Assy Feed (PL3.1.37) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Cover Right* (RRP 1.1.7).
8. Remove the *Plate Assy Left* (RRP 9.1.1).
9. Remove the *Plate Handle* (RRP 9.1.3).
10. Remove the *PWBA HKB PS* (RRP 10.1.9).
11. Remove the *Feeder* (RRP 3.1.10).
12. Remove a screw fixing Cramp(PL 3.1.44) and Bracket(PL 3.1.33) from the Feeder.
13. Remove the three screws securing the *Bracket* from the *Feeder*.
14. Remove the *Bracket* from the *Feeder*.
15. Draw the *Gear 3* (PL3.1.34) from the shaft of *Feeder*.
16. Draw the *Gear 2* (PL3.1.31) from the shaft of *Feeder*.
17. Disengage the E-ring that secures the *Clutch Assy Feed* to the *Feeder*.
18. Unclamp the harness of *Clutch Assy Feed* from the *Feeder*.
19. Unplug the connector (P/J65) from the *PWBA Feeder*.
20. Draw the *Clutch Assy Feed* from the shaft of *Feeder Assy* (PL3.1.19) in the *Feeder*.

RRP 3.1.8 Clutch Assy Feed (PL3.1.37) continued

Replacement

1. Aligning the position exactly, insert the *Clutch Assy Feed* into the shaft of *Feeder Assy* (PL3.1.19) in the *Feeder*.
2. Plug the connector (P/J65) to the *PWBA Feeder*.
3. Clamp the harness of *Clutch Assy Feed* to the *Feeder.*
4. Secure the *Clutch Assy Feed* to the shaft of *Feeder Assy* in the *Feeder* with the E-ring.
5. Aligning the position exactly, insert the *Gear 2* (PL3.1.31) into the shaft of *Feeder*.
6. Aligning the position exactly, insert the *Gear 3* (PL3.1.34) into the shaft of *Feeder*.
7. Align the *Bracket* (PL3.1.33) with its mount position to the *Feeder*.
8. Tighten the Bracket and the Cramp(PL 3.1.44) on the Feeder by a screw.
9. Secure the *Bracket* from the *Feeder* with three screws.
10. Mount the *Feeder* (RRP 3.1.10).
11. Mount the *PWBA HKB PS* (RRP 10.1.9).
12. Mount the *Plate Handle* (RRP 9.1.3).
13. Mount the *Plate Assy Left* (RRP 9.1.1).
14. Mount the *Cover Right* (RRP 1.1.7).
15. Mount the *Cover Assy Top* (RRP 1.1.4).
16. Mount the *Cover Left* (RRP 1.1.1).
17. Mount the *Cover Assy I/F* (RRP 1.1.2).
18. Mount the *Chute MBF Assy* (RRP 4.1.1).
19. Mount the *Cover Front L/H* (RRP 1.1.10).
20. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 3.1.8 Clutch Assy Feed (PL3.1.37) continued

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RRP 3.1.9 Socket (PL3.1.40)

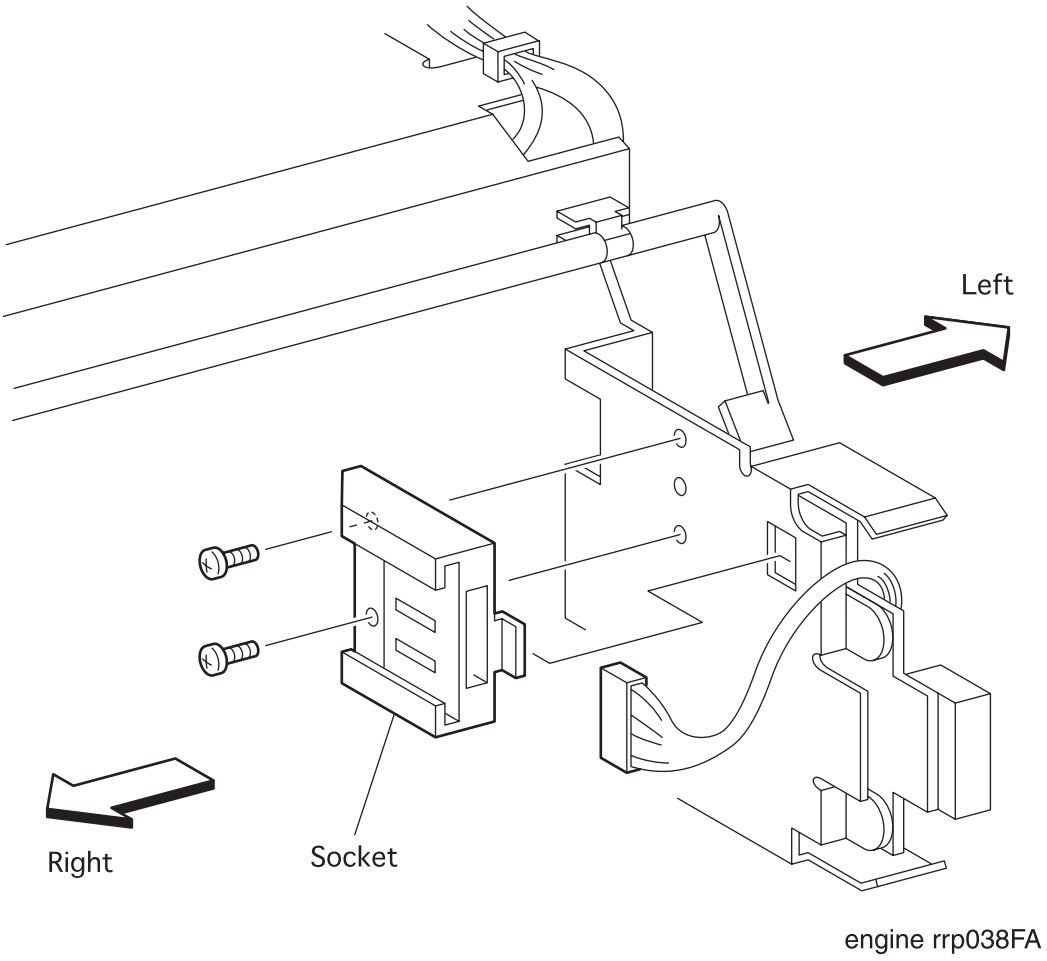

Figure 40. Socket Removal

RRP 3.1.9 Socket (PL3.1.40) continued

Removal

1. Draw the *Cassette Assy* (PL2.1.1) from the printer.
2. Remove the two screws securing the *Socket* to the *Feeder* in the printer.

NOTE

In the following steps, do not detach *Feeder* and *Socket* far away because they are connected with the harness.

3. Detach the *Socket* a little from the *Feeder*.
4. Unplug the connector (P/J671) from the *Socket*.

Replacement

1. Plug the connector (P/J671) to the *Socket*.

NOTE

In the following steps, do not allow the harness to get caught between *Feeder* and *Socket*.

2. Aligning the position exactly, insert the boss of *Socket* into a hole in the *Feeder*.
3. Secure the *Socket* to the *Feeder* with two screws.
4. Mount the *Cassette Assy* (RRP 2.1.1).

RRP 3.1.10 Feeder (with1-40) (Reference Only)

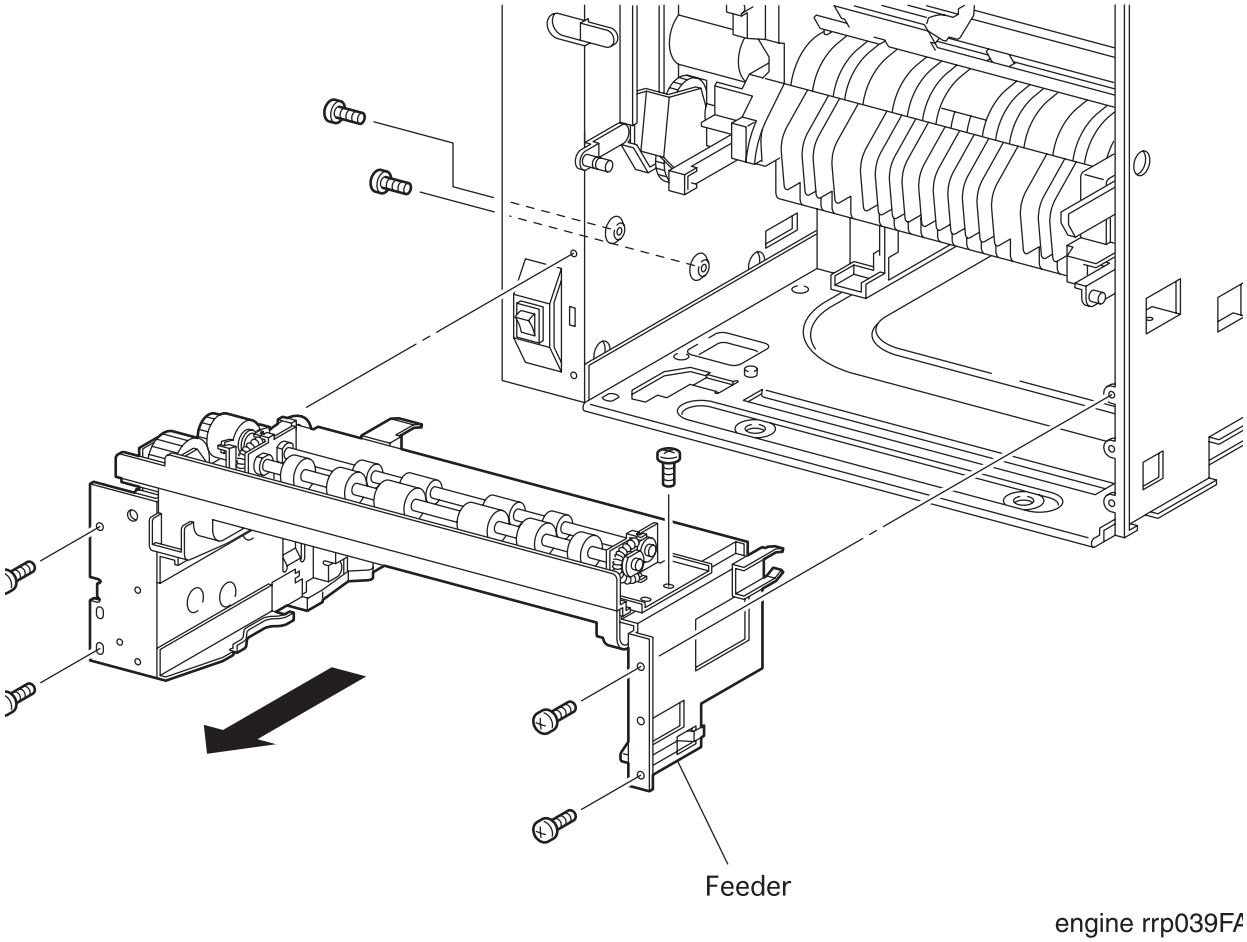

Figure 41. Feeder Removal

RRP 3.1.10 Feeder (with1-40) (Reference Only) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Cover Right* (RRP 1.1.7).
8. Remove the *Plate Assy Left* (RRP 9.1.1).
9. Remove the *Plate Handle* (RRP 9.1.3).
10. Remove the *PWBA HKB PS* (RRP 10.1.9).
11. Remove the seven screws securing the *Feeder* to the Printer
12. Draw the *Feeder* toward the front to remove from the printer.

Replacement

1. Aligning the position exactly, insert the *Feeder* into the printer.
2. Secure the *Feeder* to the printer with seven screws.
3. Mount the *PWBA HKB PS* (RRP 10.1.9).
4. Mount the *Plate Handle* (RRP 9.1.3).
5. Mount the *Plate Assy Left* (RRP 9.1.1).
6. Mount the *Cover Right* (RRP 1.1.7).
7. Mount the *Cover Assy Top* (RRP 1.1.4).
8. Mount the *Cover Left* (RRP 1.1.1).
9. Mount the *Cover Assy I/F* (RRP 1.1.2).
10. Mount the *Chute MBF Assy* (RRP 4.1.1).
11. Mount the *Cover Front L/H* (RRP 1.1.10).
12. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.1 Chute MBF Assy (PL4.1.1)

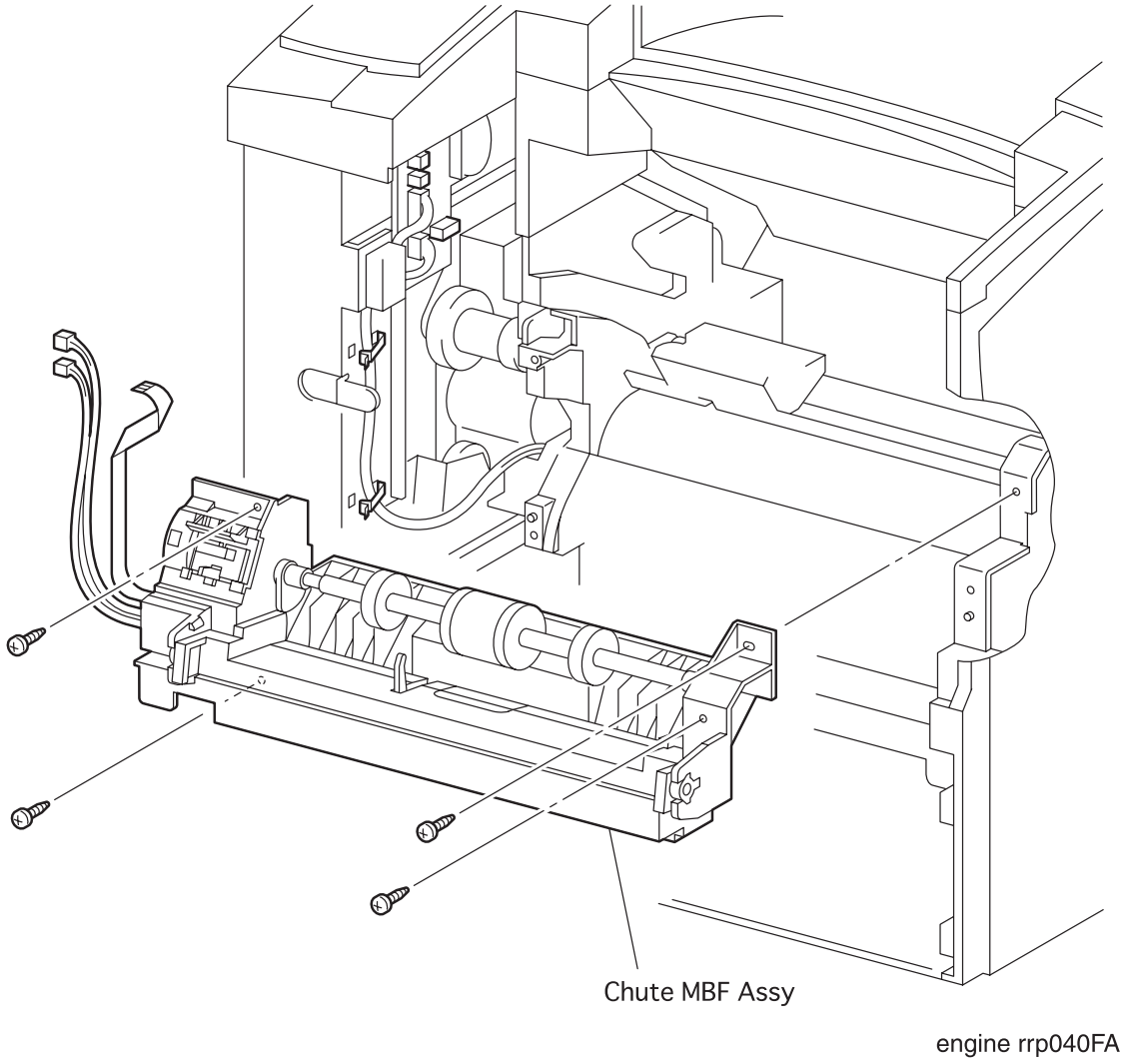

Figure 42. Chute MBF Assy Removal

RRP 4.1.1 Chute MBF Assy (PL4.1.1) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Unplug the connector (P/J44) of the *Chute MBF Assy*.
4. Unplug the connector (P/J45) of the *Chute MBF Assy*.
5. Unplug the connector (P/J231) of the *Chute MBF Assy*.
6. Release three clamps securing the harness of *Chute MBF Assy* to the printer.
7. Remove the four screws securing the *Chute MBF Assy* to the Printer
8. Remove the *Chute MBF Assy* from the printer.

Replacement

1. Align the *Chute MBF Assy* with its mount position to the Printr.
2. Secure the *Chute MBF Assy* to the printer with four screws.
3. Plug the connector (P/J44) in the *Chute MBF Assy*.
4. Plug the connector (P/J45) in the *Chute MBF Assy*.
5. Plug the connector (P/J231) in the *Chute MBF Assy*.
6. Secure the harness of *Chute MBF Assy* to the printer with three clamps.
7. Mount the *Cover Front L/H* (RRP 1.1.10).
8. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.2 Roll Assy MBF(with 3-6,28) (PL4.1.2)

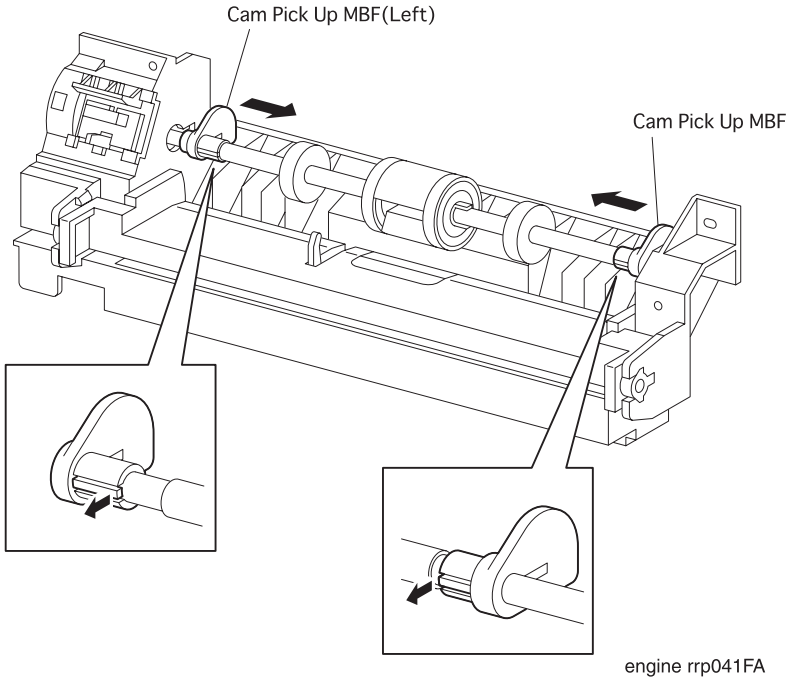

Figure 43. Roll Assy MBF Removal(1)

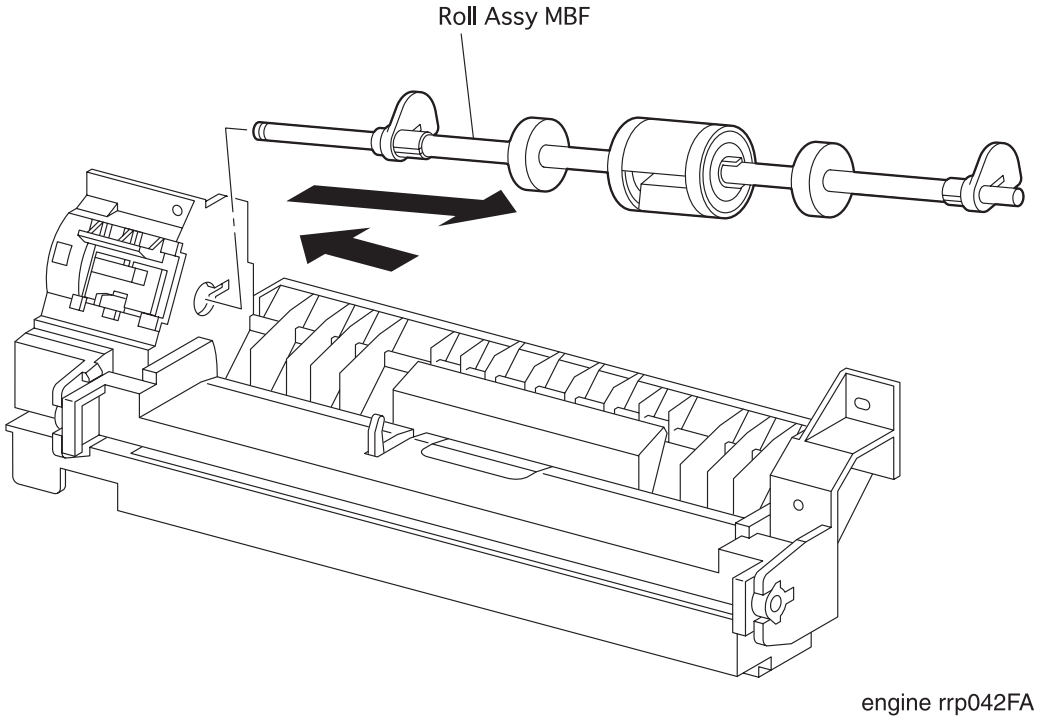

Figure 44. Roll Assy MBF Removal(2)

RRP 4.1.2 Roll Assy MBF(with 3-6,28) (PL4.1.2) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Spring MBF* (RRP 4.1.9).
5. Remove the *Gear Pick Up* (RRP 4.1.10).
6. Unhook the right *Cam Pick Up MBF* (PL4.1.4) secured to the *Shaft Assy MBF* (PL4.1.3), and shift the *Cam Pick Up MBF* to the left from the *Chute MBF Assy*.
7. Unhook the left *Cam Pick Up MBF* (left) (PL4.1.28) secured to the *Shaft Assy MBF*, and shift the *Cam Pick Up MBF* (left) to the right from the *Chute MBF Assy*.
8. Aligning the boss of left shaft of *Shaft Assy MBF* with the left slit of *Chute MBF Assy*, move the *Roll Assy MBF* (with 3-6, 28) to the left, and remove the right shaft of *Shaft Assy MBF* from the *Bearing* (PL4.1.7).
9. Raising the right shaft of *Roll Assy MBF* (with 3-6, 28), draw off the *Roll Assy MBF* (with 3-6, 28) toward the diagonal right while passing the boss of left shaft of *Shaft Assy MBF* through the left slit of *Chute MBF Assy*.

Replacement

1. Insert the boss of left shaft of *Shaft Assy MBF* (PL4.1.3) into the left slit of *Chute MBF Assy* (PL4.1.1).
2. Aligning the boss of left shaft of *Shaft Assy MBF* with the left slit of *Chute MBF Assy*, move the *Roll Assy MBF* (with 3-6) to the right, and insert the right shaft of *Shaft Assy MBF* into the *Baering* (PL4.1.7).
3. Aligning the slit of left *Cam Pick Up MBF* (PL4.1.4) on the *Shaft Assy MBF* with the left boss of *Shaft Assy MBF*, move the *Cam Pick Up MBF* to the left and secure it with a hook.
4. Aligning the slit of right *Cam Pick Up MBF* (PL4.1.4) on the *Shaft Assy MBF* with the right boss of *Shaft Assy MBF*, move the *Cam Pick Up MBF* to the right and secure it with a hook.
5. Mount the *Gear Pick Up* (RRP 4.1.10).
6. Mount the *Spring MBF* (RRP 4.1.9).
7. Mount the *Chute MBF Assy* (RRP 4.1.1).
8. Mount the *Cover Front L/H* (RRP 1.1.10).
9. Mount the *Cover Assy Front* (RRP 1.1.8)

RRP 4.1.3 Roll Assy MBF (PL4.1.6)

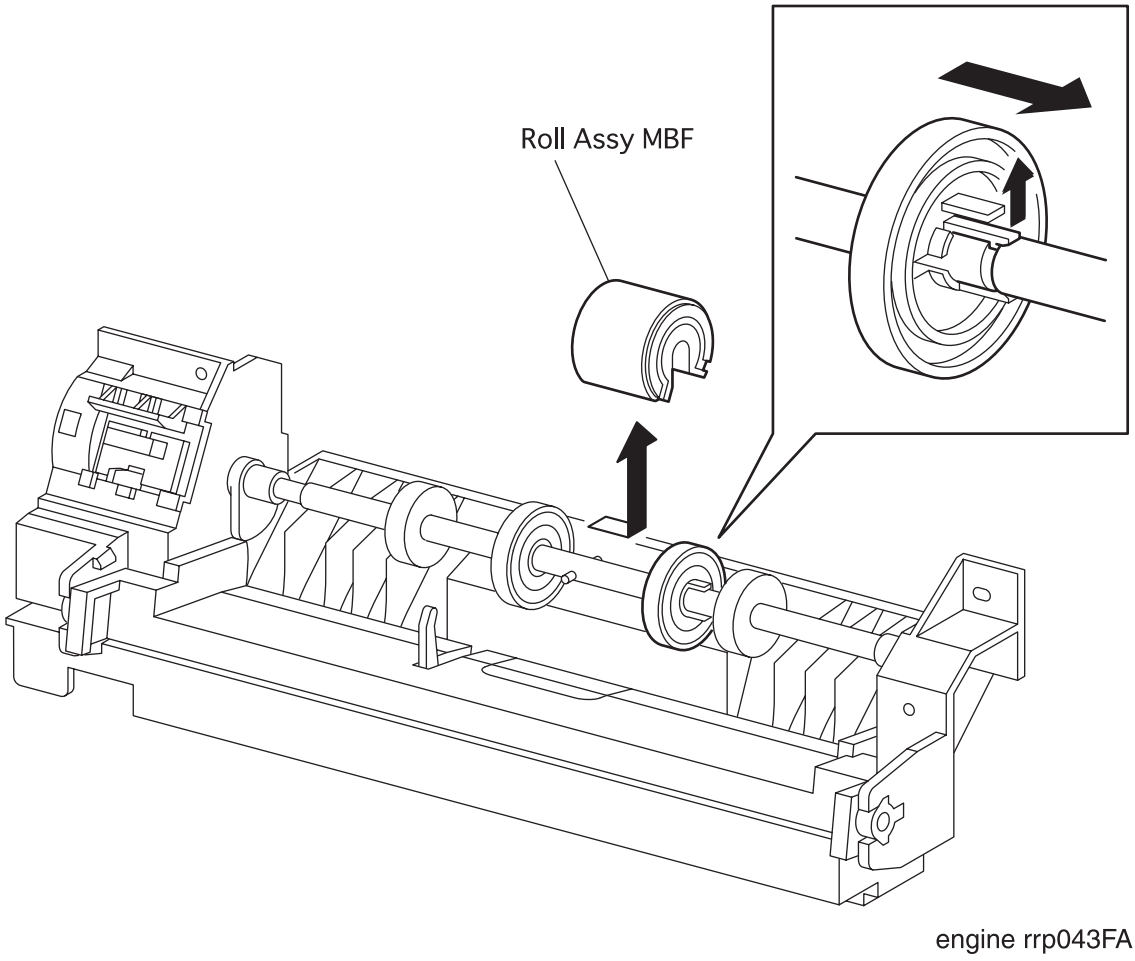

Figure 45. Roll Assy MBF Removal

RRP 4.1.3 Roll Assy MBF (PL4.1.6) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Unhook the right Core (PL4.1.5) secured to the *Shaft Assy MBF* (PL4.1.3), and shift the *Core* to the right from the *Chute MBF Assy* (PL4.1.1).
5. Move the *Roll Assy MBF* to the right, which is secured to the *Shaft Assy MBF*, and raise it upward to remove from the *Chute MBF Assy*.

Replacement

1. Aligning the position exactly, mount the *Roll Assy MBF* on the shaft of *Shaft Assy MBF* (PL4.1.3) from the *Chute MBF Assy*.
2. Aligning the groove of *Roll Assy MBF* with a boss of *Shaft Assy MBF*, move the *Roll Assy MBF* to the left, and secure the *Roll Assy MBF* to the *Shaft Assy MBF*.
3. Move the right *Core* (PL4.1.5) on the *Shaft Assy MBF* to the left from the *Chute MBF Assy*, hook the *Core* to the groove of *Shaft Assy MBF*.
4. Mount the *Chute MBF Assy* (RRP 4.1.1).
5. Mount the *Cover Front L/H* (RRP 1.1.10).
6. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.4 Tray Bottom Assy (PL4.1.8)

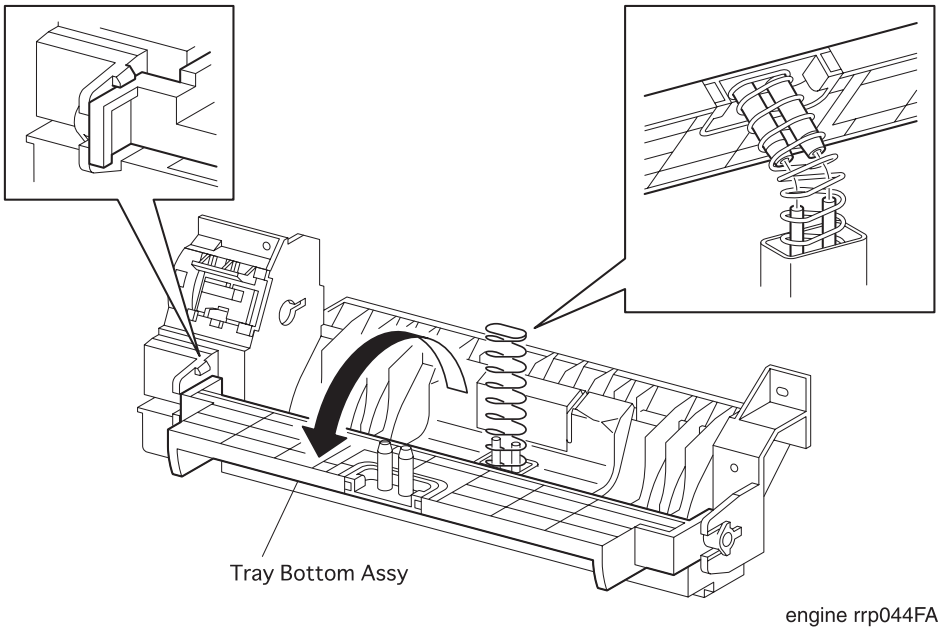

Figure 46. Tray Bottom Assy Removal(1)

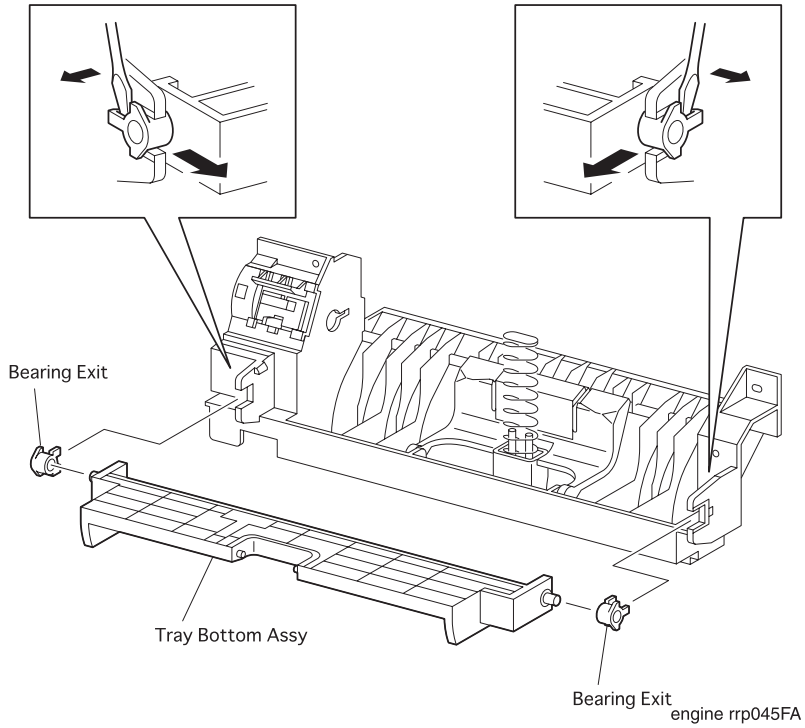

Figure 47. Tray Bottom Assy Removal(2)

RRP 4.1.4 Tray Bottom Assy (PL4.1.8) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Spring MBF* (RRP 4.1.9).
5. Remove the *Gear Pick Up* (RRP 4.1.10).
6. Remove the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
7. Disengaging two hooks that secure the *Tray Bottom Assy* to the *Chute MBF Assy*, open the *Tray Bottom Assy* toward the front.
8. Remove the *Tray Bottom Pick Up*. (RRP 4.1.12)
9. Unhook the right *Bearing Exit* (PL4.1.14) secured to the *Tray Bottom Assy* from the *Chute MBF Assy*.
10. Unhook the left *Bearing Exit* secured to the *Tray Bottom Assy* from the *Chute MBF Assy*.
11. Remove the *Tray Bottom Assy* together with the left and right *Bearing Exits* from the *Chute MBF Assy*.
12. Remove the *Bearing Exits* from the left and right shafts of *Tray Bottom Assy*.

Replacement

1. Mount the *Bearing Exits* on the left and right shafts of *Tray Bottom Assy*.
2. Aligning the position exactly, mount the *Tray Bottom Assy* together with the left and right *Bearing Exits* on the bearing section of *Chute MBF Assy*.
3. Secure the left shaft of *Tray Bottom Assy* to the *Chute MBF Assy* with a hook of *Bearing Exit*.
4. Secure the right shaft of *Tray Bottom Assy* to the *Chute MBF Assy* with a hook of *Bearing Exit*.
5. Mount the *Tray Bottom Pick Up* (RRP 4.1.12).
6. Insert the *Spring Tray Bottom MBF* (PL4.1.13) into two studs of *Tray Bottom Pick Up* from the *Chute MBF Assy*.
7. Deflecting the right hook of *Chute MBF Assy*, rotate the *Tray Bottom Assy* together with the *Tray Bottom Pick Up* toward the rear.
8. Insert two shafts of *Chute MBF Assy* into two stud holes of *Tray Bottom Pick Up* to secure the *Tray Bottom Assy* with left and right hooks of *Chute MBF Assy*.
9. Mount the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
10. Mount the *Gear Pick Up* (RRP 4.1.10).
11. Mount the *Spring MBF* (RRP 4.1.9).
12. Mount the *Chute MBF Assy* (RRP 4.1.1).
13. Mount the *Cover Front L/H* (RRP 1.1.10).
14. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.5 Actuator N/P MBF(PL4.1.12)

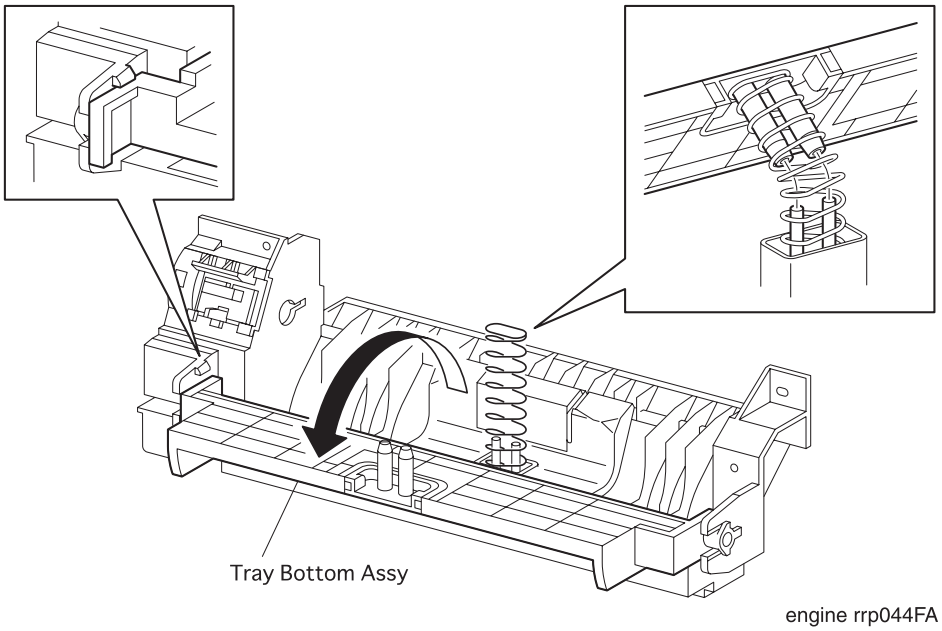

Figure 48. Actuator N/P MBF Removal(1)

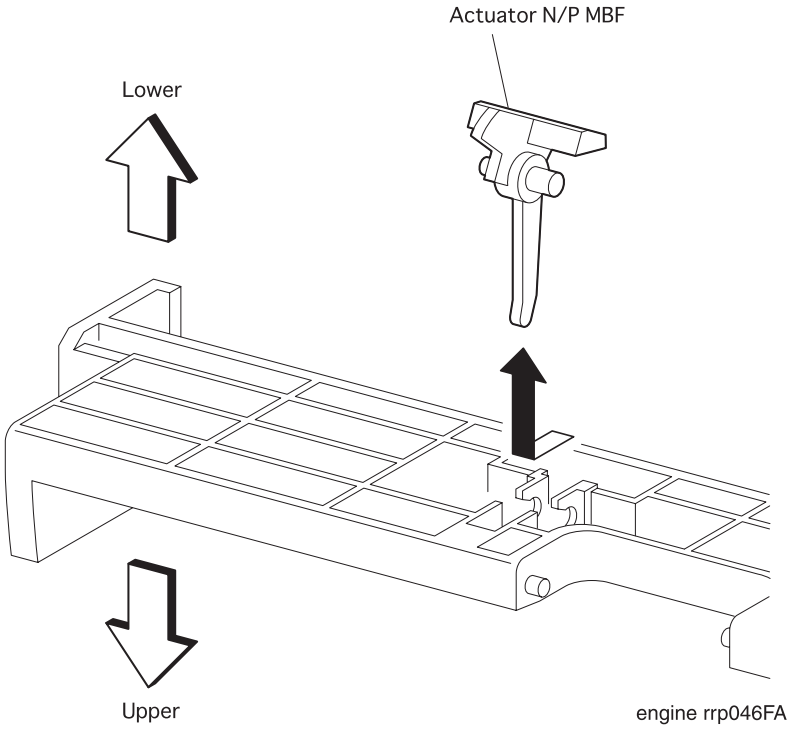

Figure 49. Actuator N/P MBF Removal(2)

RRP 4.1.5 Actuator N/P MBF(PL4.1.12) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Spring MBF* (RRP 4.1.9).
5. Remove the *Gear Pick Up* (RRP 4.1.10).
6. Remove the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
7. Disengaging two hooks that secure the *Tray Bottom Assy* to the *Chute MBF Assy* (PL4.1.1), open the *Tray Bottom Assy* toward the front.
8. Remove the *Tray Bottom Pick Up* (RRP 4.1.12).
9. Disengaging two hooks that secure the *Actuator N/P MBF* to the back of *Tray Bottom* (PL4.1.11), remove the *Actuator N/P MBF* from the *Chute MBF Assy*.

Replacement

1. Aligning the position exactly, mount the *Actuator N/P MBF* on the back of *Tray Bottom* (PL4.1.11) in the *Chute MBF Assy* (PL4.1.1.)
2. Secure the shaft of *Actuator N/P MBF* to two hooks on the back of *Tray Bottom*.
3. Mount the *Tray Bottom Pick Up* (RRP 4.1.12).
4. Insert the *Spring Tray Bottom MBF* (PL4.1.13) into two studs of *Tray Bottom Pick Up* from the *Chute MBF Assy*.
5. Deflecting the right hook of *Chute MBF Assy*, rotate the *Tray Bottom Assy* together with the *Tray Bottom Pick Up* toward the rear.
6. Insert two shafts of *Chute MBF Assy* into two stud holes of *Tray Bottom Pick Up* to secure the *Tray Bottom Assy* with left and right hooks of *Chute MBF Assy*.
7. Mount the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
8. Mount the *Gear Pick Up* (RRP 4.1.10).
9. Mount the *Spring MBF* (RRP 4.1.9).
10. Mount the *Chute MBF Assy* (RRP 4.1.1).
11. Mount the *Cover Front L/H* (RRP 1.1.10).
12. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.6 Pad Assy Retard (PL4.1.15)

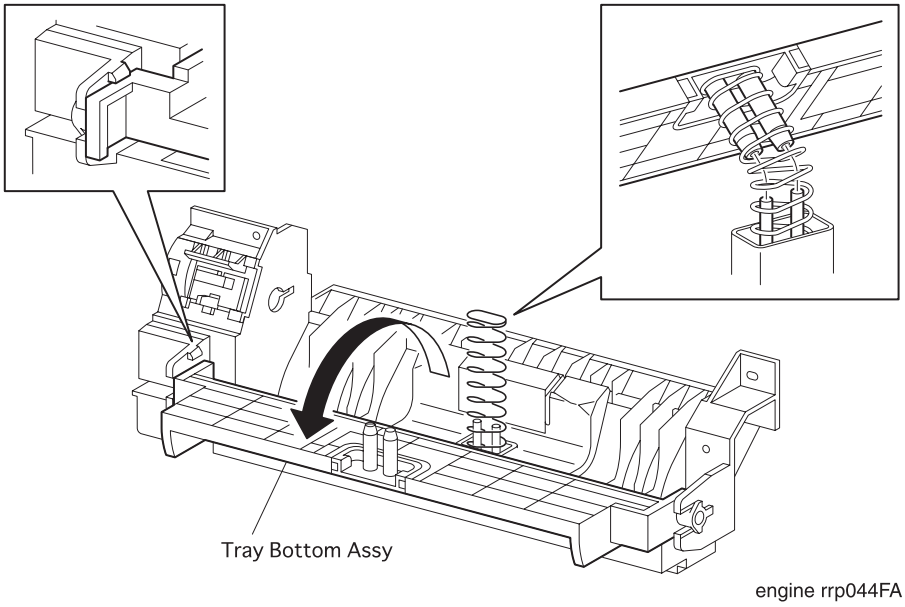

Figure 50. Pad Assy Retard Removal(1)

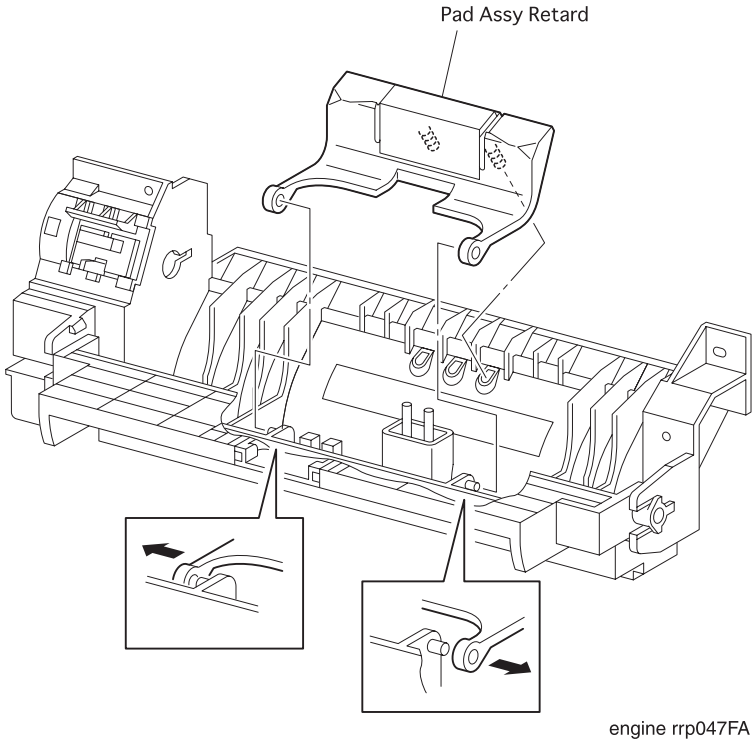

Figure 51. Pad Assy Retard Removal(2)

RRP 4.1.6 Pad Assy Retard (PL4.1.15) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Spring MBF* (RRP 4.1.9).
5. Remove the *Gear Pick Up* (RRP 4.1.10).
6. Remove the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
7. Disengaging two hooks that secure the *Tray Bottom Assy* to the *Chute MBF Assy* (PL4.1.1), open the *Tray Bottom Assy* toward the front.
8. Remove the *Tray Bottom Pick Up* (RRP 4.1.12).
9. Deflecting the left bracket of *Pad Assy Retard* from the *Chute MBF Assy*, disengage the hole in the *Pad Assy Retard* from the boss of *Chute MBF Assy*.
10. Deflecting the right bracket of *Pad Assy Retard* from the *Chute MBF Assy*, disengage the hole in the *Pad Assy Retard* from the boss of *Chute MBF Assy*, and remove the *Pad Assy Retard*.

Replacement

1. Engage the hole in the right bracket of *Pad Assy Retard* with the right boss of *Chute MBF Assy* (PL4.1.1).
2. Deflecting the left bracket of *Pad Assy Retard*, engage the left boss of *Chute MBF Assy* with the hole in the right bracket of *Pad Assy Retard*.
3. Mount the *Tray Bottom Pick Up* (RRP 4.1.11).
4. Insert the *Spring Tray Bottom MBF* (PL4.1.13) into two studs of *Tray Bottom Pick Up* from the *Chute MBF Assy*.
5. Deflecting the right hook of *Chute MBF Assy*, rotate the *Tray Bottom Assy* together with the *Tray Bottom Pick Up* toward the rear.
6. Insert two shafts of *Chute MBF Assy* into two stud holes of *Tray Bottom Pick Up* to secure the *Tray Bottom Assy* with left and right hooks of *Chute MBF Assy*.
7. Mount the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
8. Mount the *Gear Pick Up* (RRP 4.1.10).
9. Mount the *Spring MBF* (RRP 4.1.9).
10. Mount the *Chute MBF Assy* (RRP 4.1.1).
11. Mount the *Cover Front L/H* (RRP 1.1.10).
12. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.7 Sensor Photo:Paper Set (PL4.1.19)

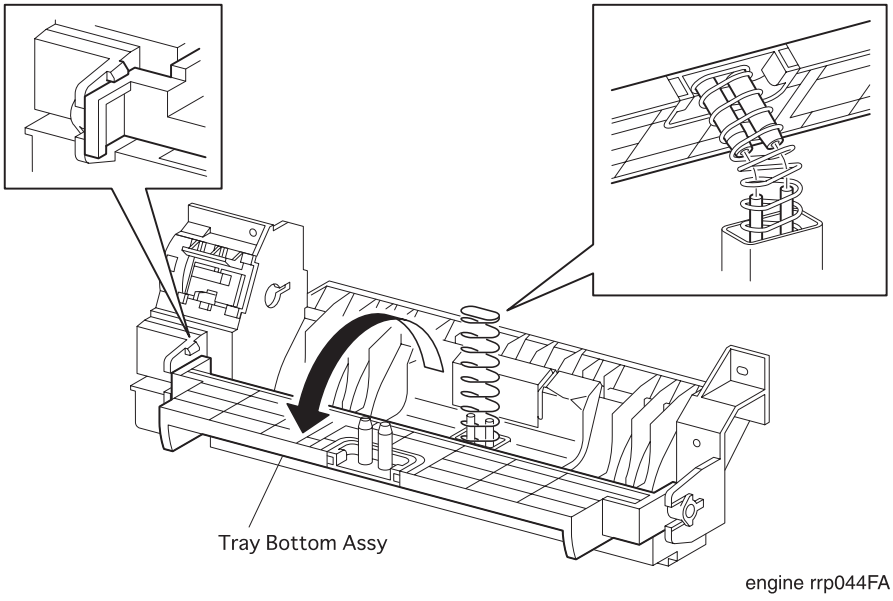

Figure 52. Sensor Photo:Paper Set Removal(1)

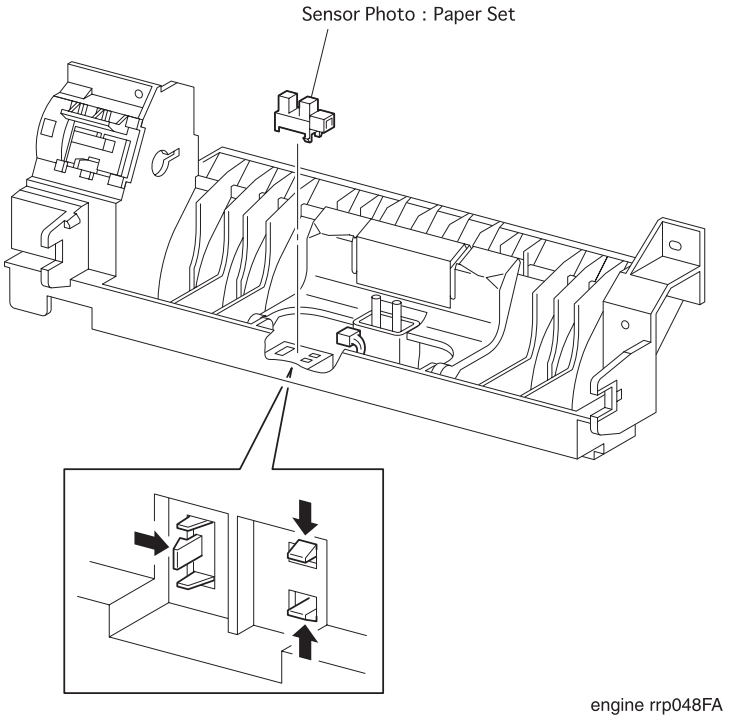

Figure 53. Sensor Photo:Paper Set Removal(2)

RRP 4.1.7 Sensor Photo:Paper Set (PL4.1.19) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Spring MBF* (RRP 4.1.9).
5. Remove the *Gear Pick Up* (RRP 4.1.10).
6. Remove the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
7. Disengaging two hooks that secure the *Tray Bottom Assy* to the *Chute MBF Assy* (PL4.1.1), open the *Tray Bottom Assy* toward the front.
8. Remove the *Tray Bottom Pick Up* (RRP 4.1.12).
9. Draw off the *Spring Tray Bottom MBF* (PL4.1.13) from two studs in the *Chute MBF Assy*.
10. Unplug the connector (P/J451) from the *Sensor Photo: Paper Set*.
11. Disengage five hooks of *Sensor Photo: Paper Set*, and remove the *Sensor Photo:Paper Set* from the *Chute Assy MBF*.

Replacement

1. Aligning the position exactly, secure the *Sensor Photo: Paper Set* to the *Chute Assy MBF* with five hooks.
2. Plug the connector (P/J451) to the *Sensor Photo: Paper Set*.
3. Insert the *Spring Tray Bottom MBF* (PL4.1.13) into two studs of *Chute MBF Assy*.
4. Mount the *Tray Bottom Pick Up*. (RRP 4.1.12)
5. Insert the *Spring Tray Bottom MBF* (PL4.1.13) into two studs of *Tray Bottom Pick Up* from the *Chute MBF Assy*.
6. Deflecting the right hook of *Chute MBF Assy*, rotate the *Tray Bottom Assy* together with the *Tray Bottom Pick Up* toward the rear.
7. Insert two shafts of *Chute MBF Assy* into two stud holes of *Tray Bottom Pick Up* to secure the *Tray Bottom Assy* with left and right hooks of *Chute MBF Assy*.
8. Mount the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
9. Mount the *Gear Pick Up* (RRP 4.1.10).
10. Mount the *Spring MBF* (RRP 4.1.9).
11. Mount the *Chute MBF Assy* (RRP 4.1.1).
12. Mount the *Cover Front L/H* (RRP 1.1.10).
13. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.8 Solenoid Pick Up (PL4.1.23)

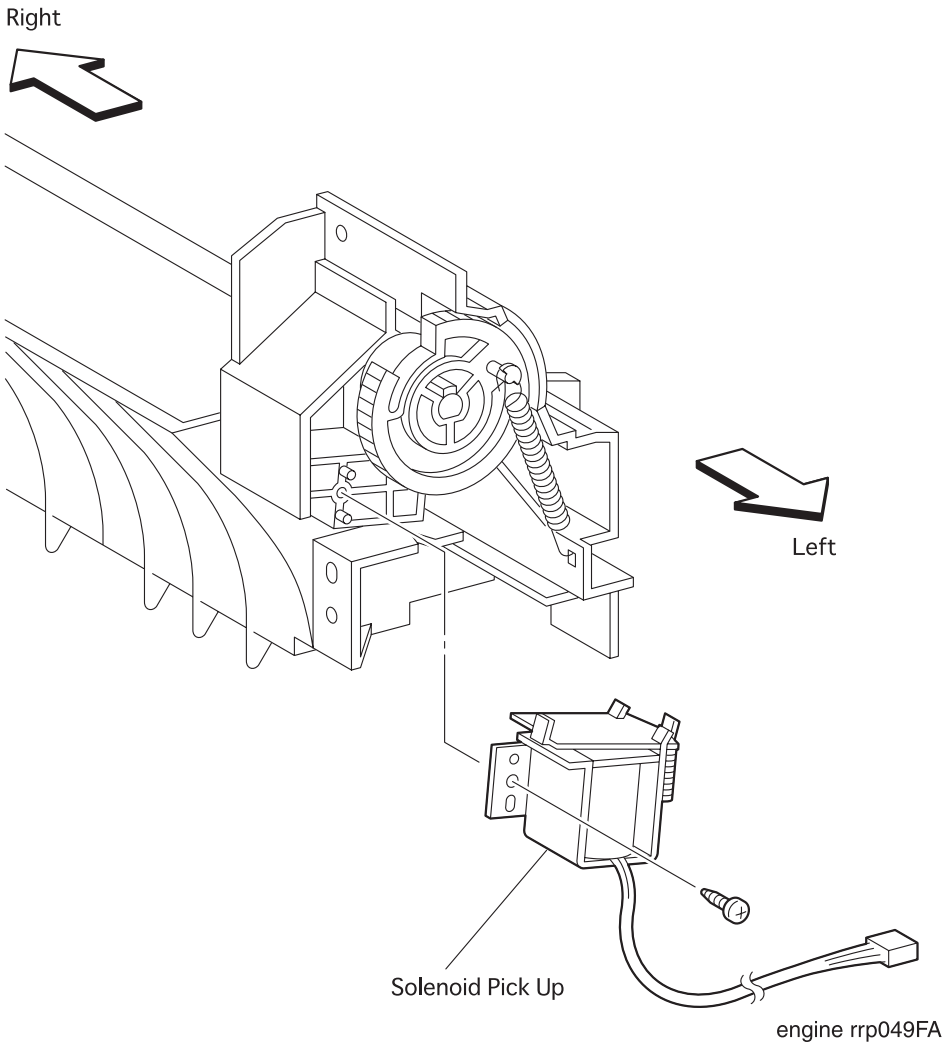

Figure 54. Solenoid Pick Up Removal

RRP 4.1.8 Solenoid Pick Up (PL4.1.23) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Spring MBF* (RRP 4.1.9).
5. Remove the *Gear Pick Up* (RRP 4.1.10).
6. Remove the one screw securing the *Solenoid Pick Up* to the *Chute MBF Assy*.
7. Remove the *Solenoid Pick Up* from the *Chute MBF Assy*.

Replacement

1. Align the *Solenoid Pick Up* with its mount position to the *Chute MBF Assy*.
2. Secure the *Solenoid Pick Up* to the *Chute MBF Assy* with one screw.
3. Mount the *Gear Pick Up* (RRP 4.1.10).
4. Mount the *Spring MBF* (RRP 4.1.9).
5. Mount the *Chute MBF Assy* (RRP 4.1.1).
6. Mount the *Cover Front L/H* (RRP 1.1.10).
7. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.9 Spring MBF (PL4.1.24)

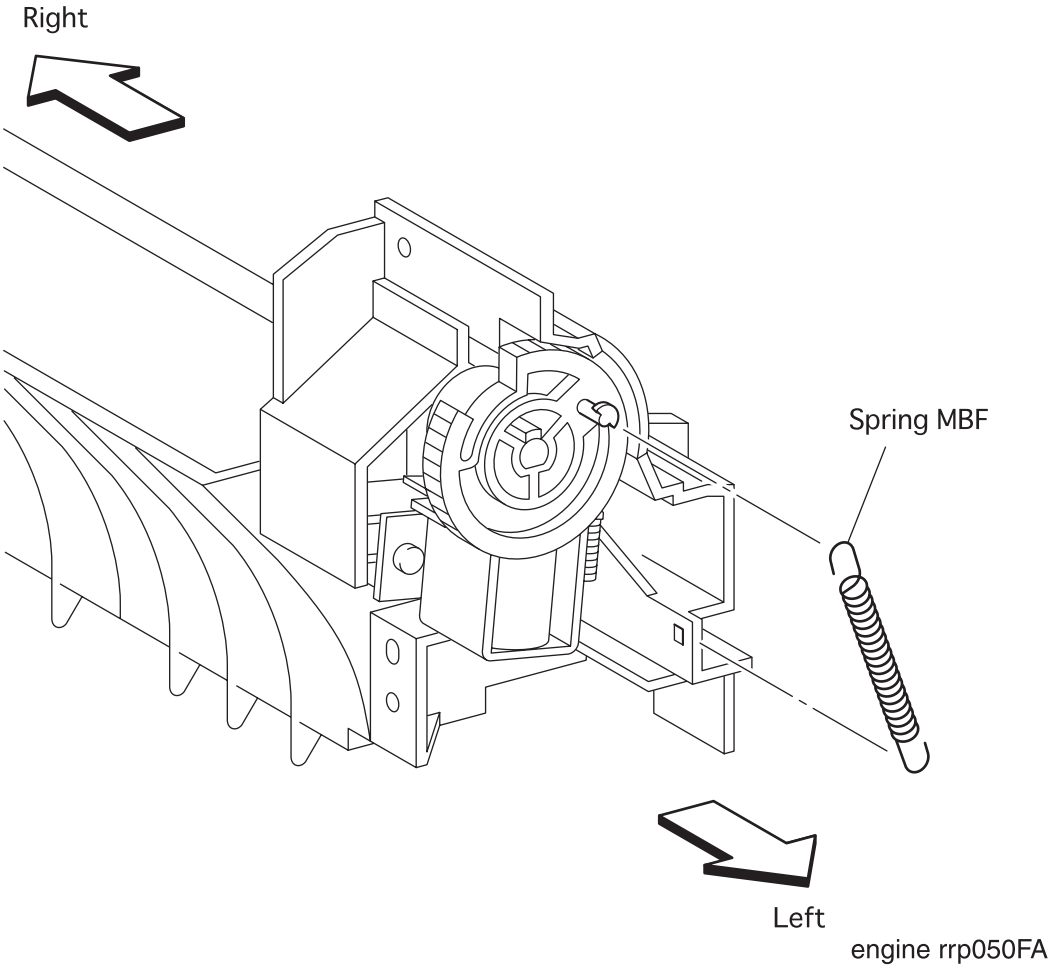

Figure 55. Spring MBF Removal

RRP 4.1.9 Spring MBF (PL4.1.24) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Unhook the *Spring MBF* secured to the *Gear Pick Up* (PL4.1.25) from the *Chute MBF Assy* (PL4.1.1).
5. Unhook the *Spring MBF* secured to the hole in the *Chute MBF Assy*, and remove the *Spring MBF*.

Replacement

1. Hook the *Spring MBF* to the boss of *Gear Pick Up* of *Chute MBF Assy*.
2. Hook the *Spring MBF* to the hole in *Chute MBF Assy*.
3. Mount the *Chute MBF Assy* (RRP 4.1.1).
4. Mount the *Cover Front L/H* (RRP 1.1.10).
5. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.10 Gear Pick Up (PL4.1.25)

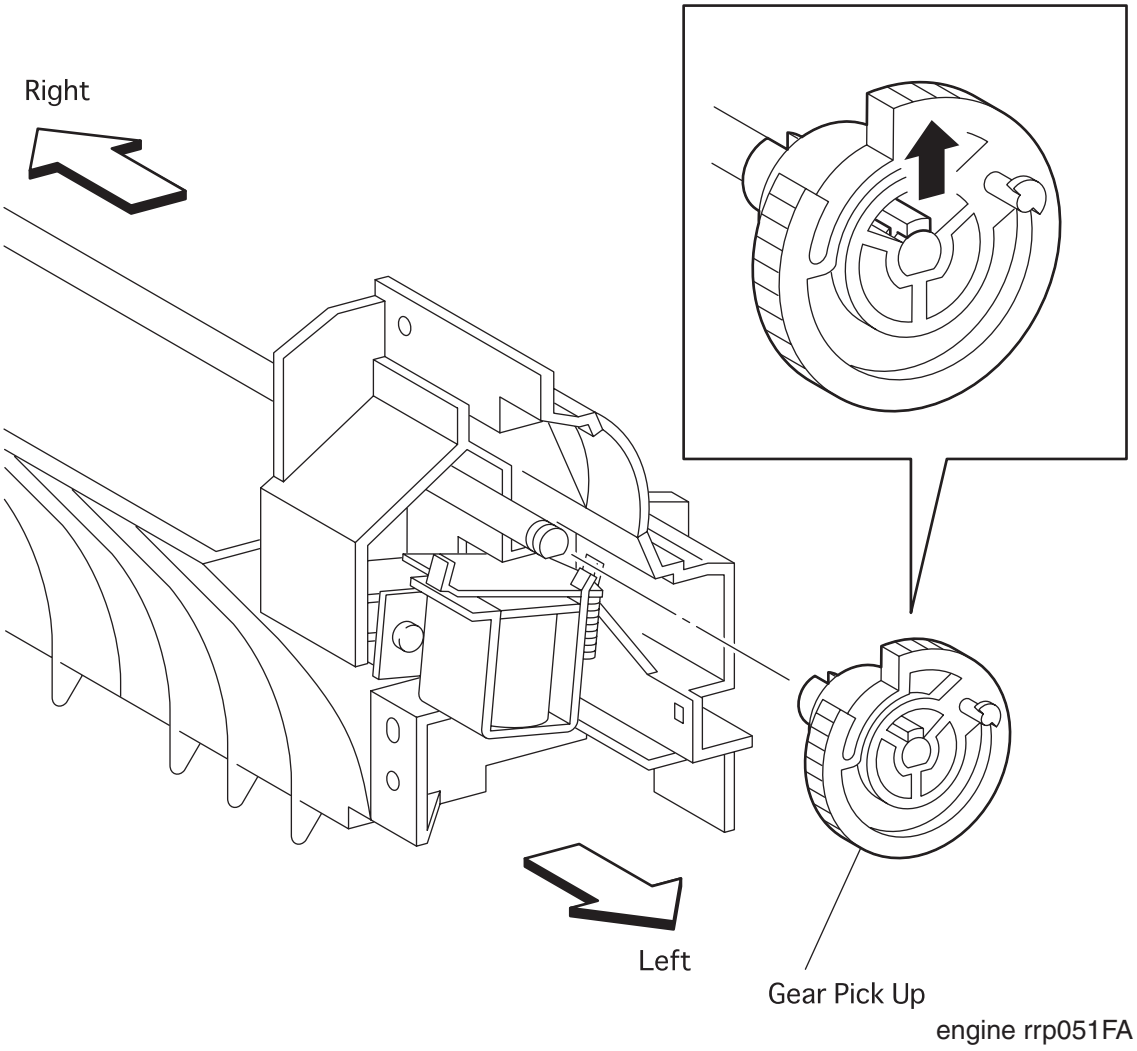

Figure 56. Gear Pick Up Removal

RRP 4.1.10 Gear Pick Up (PL4.1.25) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Spring MBF* (RRP 4.1.9).
5. Unhook the *Gear Pick Up* secured to the *Shaft Assy MBF* (PL4.1.3) from the *Chute MBF Assy* (PL4.1.1).
6. Draw the *Gear Pick Up* from the *Shaft Assy MBF*.

Replacement

1. Insert the *Gear Pick Up* into the left shaft of *Shaft Assy MBF* (PL4.1.3) from the *Chute MBF Assy* (PL4.1.1).
2. Hook the *Gear Pick Up* to the groove in the shaft of *Shaft Assy MBF* (PL4.1.3).
3. Mount the *Spring MBF* (RRP 4.1.9).
4. Mount the *Chute MBF Assy* (RRP 4.1.1).
5. Mount the *Cover Front L/H* (RRP 1.1.10).
6. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.11 Connector Assy ENV. (PL4.1.27)

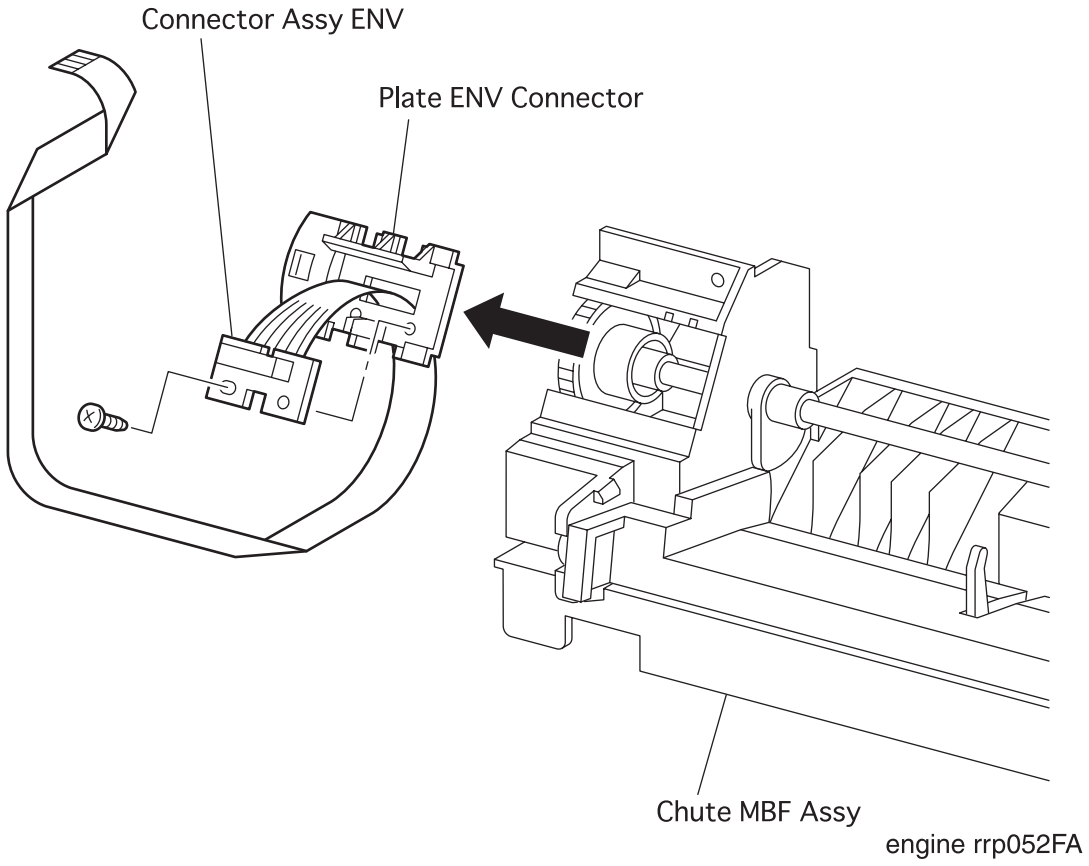

Figure 57. Connector Assy ENV Removal

RRP 4.1.11 Connector Assy ENV (PL4.1.27) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Sliding the *Plate ENV Assy* (PL4.1.30) toward the left, remove it from the *Chute Assy MBF* (PL4.1.1).
5. Remove the one screw securing the *Connector Assy ENV* to the *Plate ENV Assy*.
6. Remove the *Connector Assy ENV* from the *Plate ENV Assy*.

Replacement

1. Align the *Connector Assy ENV* with its mount position to the *Plate ENV Assy* (PL4.1.30).
2. Secure the *Connector Assy ENV* to the *Plate ENV Assy* with one screw.
3. Sliding the *Plate ENV Assy* toward the right, mount it to the *Chute Assy MBF* (PL4.1.1).
4. Mount the *Chute MBF Assy* (RRP 4.1.1).
5. Mount the *Cover Front L/H* (RRP 1.1.10).
6. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 4.1.12 Tray Bottom Pick Up (with9,10) (Reference Only)

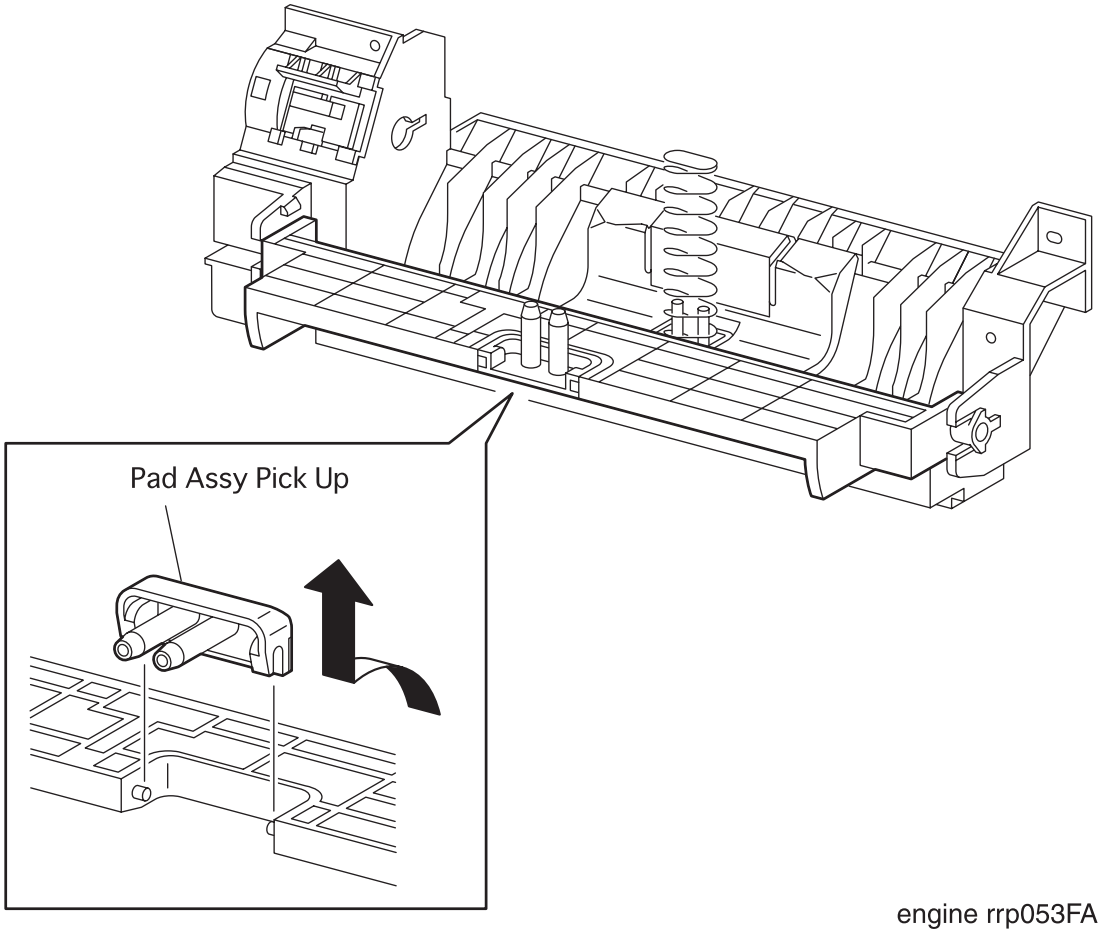

Figure 58. Tray Pick Up Removal

RRP 4.1.12 Tray Bottom Pick Up (with9,10) (Reference Only) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Spring MBF* (RRP 4.1.9).
5. Remove the *Gear Pick Up* (RRP 4.1.10).
6. Remove the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
7. Disengaging two hooks that secure the *Tray Bottom Assy* (PL4.1.14) to the *Chute MBF Assy* (PL4.1.1), open the *Tray Bottom Assy* toward the front.
8. Rotate the *Tray Bottom Pick Up* by about 90 degrees toward the front from the *Tray Bottom Assy*.
9. Remove the *Tray Bottom Pick Up* from the shaft of *Tray Bottom Assy*.

Replacement

1. Aligning the position exactly, mount the *Tray Bottom Pick Up* on the shaft of *Tray Bottom Assy* (PL4.1.14) from the *Chute MBF Assy* (PL4.1.1).
2. Rotate the *Tray Bottom Pick Up* by about 90 degrees toward the rear from the *Tray Bottom Assy*.
3. Insert the *Spring Tray Bottom MBF* (PL4.1.13) into two studs of *Tray Bottom Pick Up* from the *Chute MBF Assy*.
4. Deflecting the right hook of *Chute MBF Assy*, rotate the *Tray Bottom Assy* together with the *Tray Bottom Pick Up* toward the rear.
5. Insert two shafts of *Chute MBF Assy* into two stud holes of *Tray Bottom Pick Up* to secure the *Tray Bottom Assy* with left and right hooks of *Chute MBF Assy*.
6. Mount the *Roll Assy MBF* (with3-6,28)(RRP 4.1.2).
7. Mount the *Gear Pick Up* (RRP 4.1.10).
8. Mount the *Spring MBF* (RRP 4.1.9).
9. Mount the *Chute MBF Assy* (RRP 4.1.1).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.1 P/H Assy (PL5.1.4)

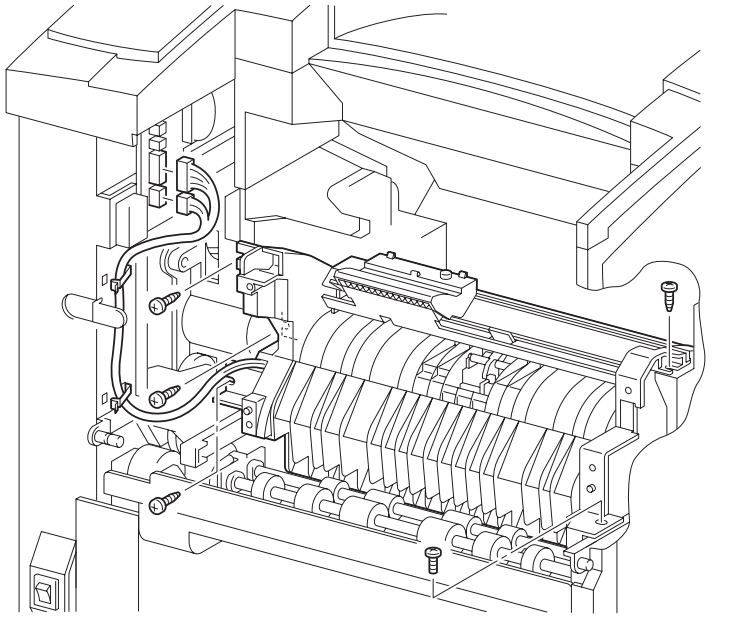

Figure 59. P/H Assy Removal(1)

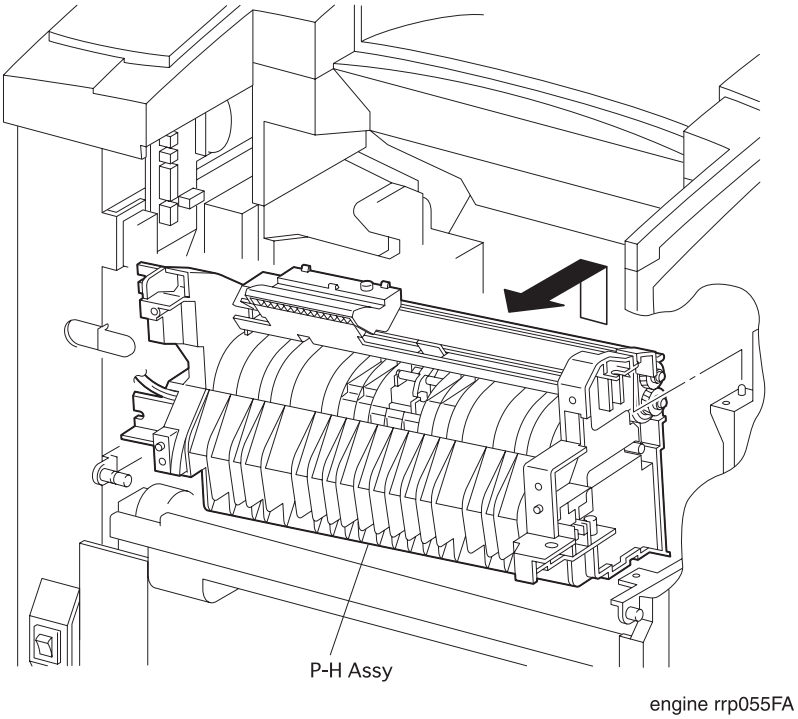

Figure 60. P/H Assy Removal(2)

RRP 5.1.1 P/H Assy (PL5.1.4) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Unplug the connector (P/J42) in the *P/H Assy*.
7. Unplug the connector (P/J43) in the *P/H Assy*.
8. Release two clamps on the harness of *P/H Assy*.
9. Remove the five screws securing the *P/H Assy* to the printer.
10. Raising a little the right end of *P/H Assy* to shift to the right, remove the *P/H Assy* upward from the printer.

Replacement

1. Insert the *P/H Assy* from diagonal right into the printer, and align the position.
2. Secure the *P/H Assy* to the printer with five screws.
3. Secure the harness of *P/H Assy* with two clamps.
4. Plug the connector (P/J42) in the *P/H Assy*.
5. Plug the connector (P/J43) in the *P/H Assy*.
6. Mount the *Gear 14* (RRP 5.1.10).
7. Mount the *Shaft 14* (RRP 5.1.10).
8. Mount the *Chute MBF Assy* (RRP 4.1.1).
9. Mount the *Cover Front L/H* (RRP 1.1.10).
10. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.2 Roll Regi Rubber (PL5.1.7)

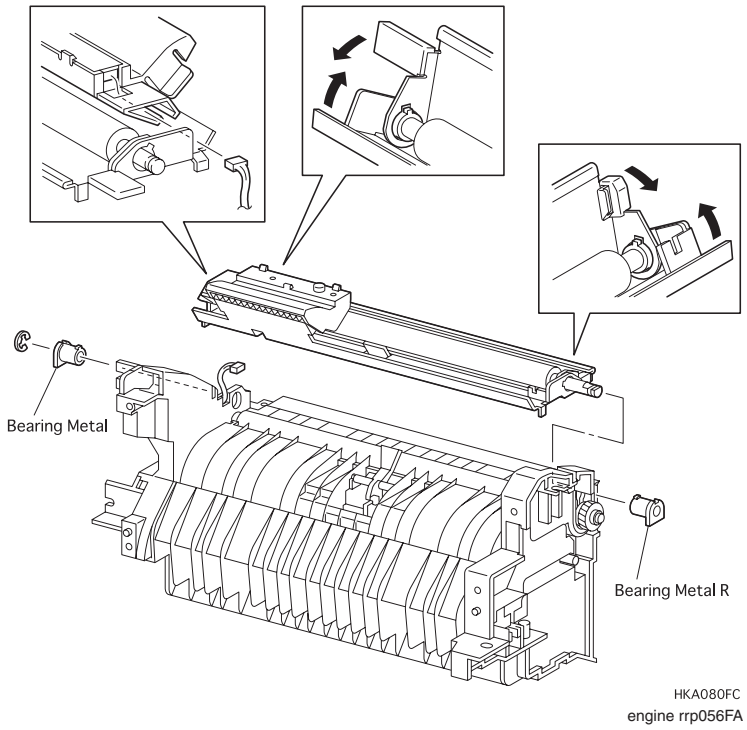

Figure 61. Roll Regi Rubber Removal(1)

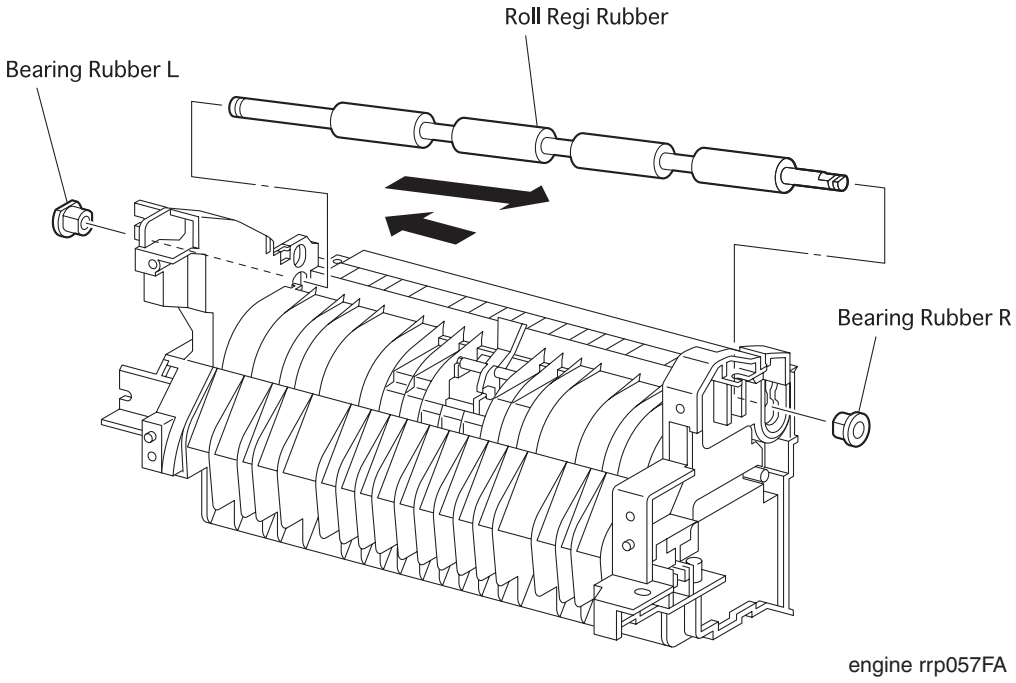

Figure 62. Roll regi Rubber Removal(2)

RRP 5.1.2 Roll Regi Rubber (PL5.1.7) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Remove the *Spring Regi L* (RRP 5.1.6).
8. Remove the *Gear Regi Metal* (RRP 5.1.7).
9. Remove the *Gear Regi Rubber* (RRP 5.1.8).
10. Remove the *Clutch Regi* (RRP 5.1.9).
11. Disengage the left E-ring that secures the *Roll Regi Metal* (PL5.1.5) to the *P/H Assy* (PL5.1.1).
12. Unhook the *Spring Torsion* (PL5.1.29) from the notch of *Chute Upper Assy* (PL5.1.6).
13. Move the Spring Torsion to the left from the *P/H Assy*, avoiding the boss of *Bearing Metal R* (PL5.1.31) .
14. Closing the *Chute Upper Assy* and *Chute Inlet* (PL5.1.8), align the boss of *Bearing Metal R* with the right slit, and draw the *Bearing Metal R* from the *P/H Assy*.
15. Closing the *Chute Upper Assy* and *Chute Inlet*, align the boss of *Bearing Metal* (PL5.1.13) with the left slit, and draw the *Bearing Metal* from the *P/H Assy*.
16. Draw upward the right shaft of *Roll Regi Metal* from the right bearing of *P/H Assy*.
17. Draw diagonal rightward the *Roll Regi Metal* together with *Chute Upper Assy* and *Chute Inlet* from the *P/H Assy*.
18. Remove the *Bearing Rubber R* (PL5.1.17) that secures the *Roll Regi Rubber* to the *P/H Assy*.
19. Remove the *Bearing Rubber L* (PL5.1.18) that secures the *Roll Regi Rubber* to the *P/H Assy*.
20. Moving the *Roll Regi Rubber* to the right from the *P/H Assy*, draw the left shaft of *Roll Regi Rubber* from the left bearing bore of *P/H Assy*.
21. Draw upward the right shaft of *Roll Regi Rubber* from the bearing of *P/H Assy*, and draw diagonal rightward the *Roll Regi Rubber* from the *P/H Assy*.

RRP 5.1.2 Roll Regi Rubber (PL5.1.7) continued

Replacement

1. Insert the left shaft of *Roll Regi Rubber* into the left bearing bore of *P/H Assy* (PL5.1.1).
2. Insert the right shaft of *Roll Regi Rubber* into the right bearing of *P/H Assy*.
3. Insert the right shaft of *Roll Regi Rubber* into the left bearing bore of *P/H Assy*.
4. Secure the *Roll Regi Rubber* to the *P/H Assy* with the *Bearing Rubber L* (PL5.1.18).
5. Secure the *Roll Regi Rubber* to the *P/H* Assy with the *Bearing Rubber R* (PL5.1.17).
6. Insert the right shaft of *Roll Regi Metal* (PL5.1.5) together with *Chute Upper Assy* (PL5.1.6) and *Chute Inlet* (PL5.1.8) into the left bearing bore of *P/H Assy*.
7. Insert the right shaft of *Roll Regi Metal* into the right bearing of *P/H Assy*.
8. Closing the *Chute Upper Assy* and *Chute Inlet* from the *P/H Assy*, engage the boss of *Bearing Metal* (PL5.1.13) with the left slit, and secure the *Roll Regi Metal* with the *Bearing Metal*.
9. Closing the *Chute Upper Assy* and *Chute Inlet* from the *P/H Assy*, engage the boss of *Bearing Metal R* (PL5.1.31) with the right slit, and secure the *Roll Regi Metal* with the B*earing Metal R*.
10. Moving the *Spring Torsion* (PL5.1.29) to the right from *P/H Assy*, insert it into the *Bearing Metal R* while avoiding the boss of *Bearing Metal R*.
11. From the *P/H Assy*, hook the *Spring Torsion* to the notch of *Chute Upper Assy*.
12. Secure the left shaft of *Roll Regi Metal* to the *P/H Assy* with the E-ring.
13. Mount the *Clutch Regi* (RRP 5.1.9).
14. Mount the *Gear Regi Rubber* (RRP 5.1.8).
15. Mount the *Gear Regi Metal* (RRP 5.1.7).
16. Mount the *Spring Regi L* (RRP 5.1.6).
17. Mount the *P/H Assy* (RRP 5.1.1.).
18. Mount the *Gear 14* (RRP 5.1.10).
19. Mount the *Shaft 14* (RRP 5.1.10).
20. Mount the *Chute MBF Assy* (RRP 4.1.1).
21. Mount the *Cover Front L/H* (RRP 1.1.10).
22. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.2 Roll Regi Rubber (PL5.1.7) continued

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RRP 5.1.3 Actuator Regi (PL5.1.10)

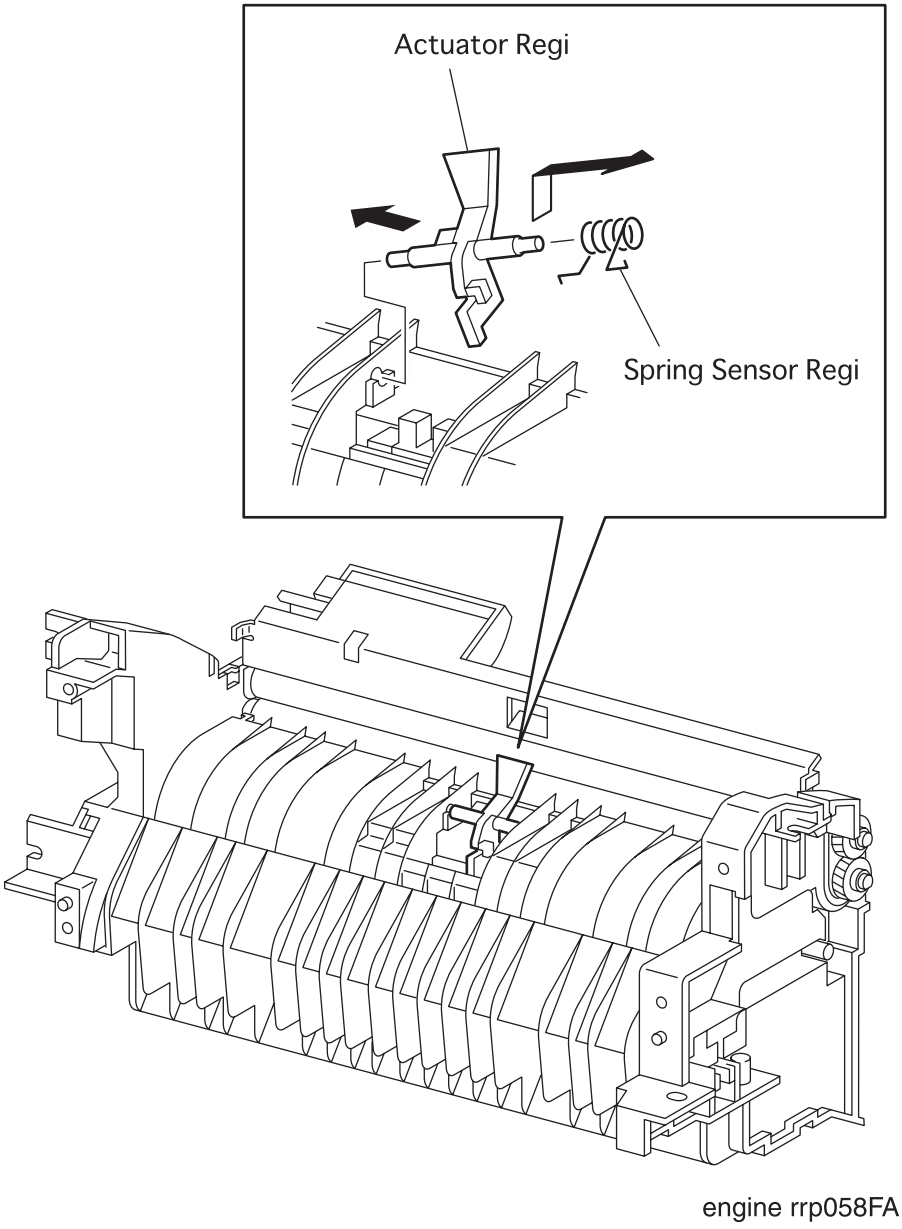

Figure 63. Actuator Regi Removal

RRP 5.1.3 Actuator Regi (PL5.1.10) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Open upward the *Chute Upper* (PL5.1.6) together with *Holder Toner Sensor* (PL5.1.2) from the *P/H Assy* (PL5.1.4).
8. Disengage the right hook of *Spring Sensor Regi* (PL5.1.11) from the *P/H Assy*.
9. Holding the operating lever of *Actuator Regi*, move it to the left to remove the right shaft of *Actuator Regi* toward the upper right from the *P/H Assy*.
10. Remove the *Spring Sensor Regi* inserted in the shaft of *Actuator Regi*.

Replacement

1. Insert the *Spring Sensor Regi* (PL5.1.11) into the right shaft of *Actuator Regi*.
2. Holding the operating lever of *Actuator Regi*, insert the left shaft into the left hole in the *P/H Assy* (PL5.1.4).
3. Holding the operating lever of *Actuator Regi*, push the bracket of *P/H Assy* with the left shaft to deflect, and insert the right shaft of *Actuator Regi* into the right hole in the *P/H Assy*.
4. Engage the left hook of *Spring Sensor Regi* with the back of operating lever of *Actuator Regi*, and engage the right hook with the right hole in the *P/H Assy*.
5. Close downward the *Chute Upper* (PL5.1.6) together with *Holder Toner Sensor* (PL5.1.2) from the *P/H Assy*.
6. Mount the *P/H Assy* (RRP 5.1.1).
7. Mount the *Gear 14* (RRP 5.1.10).
8. Mount the *Shaft 14* (RRP 5.1.10).
9. Mount the *Chute MBF Assy* (RRP 4.1.1).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.4 Spring Sensor Regi (PL5.1.11)

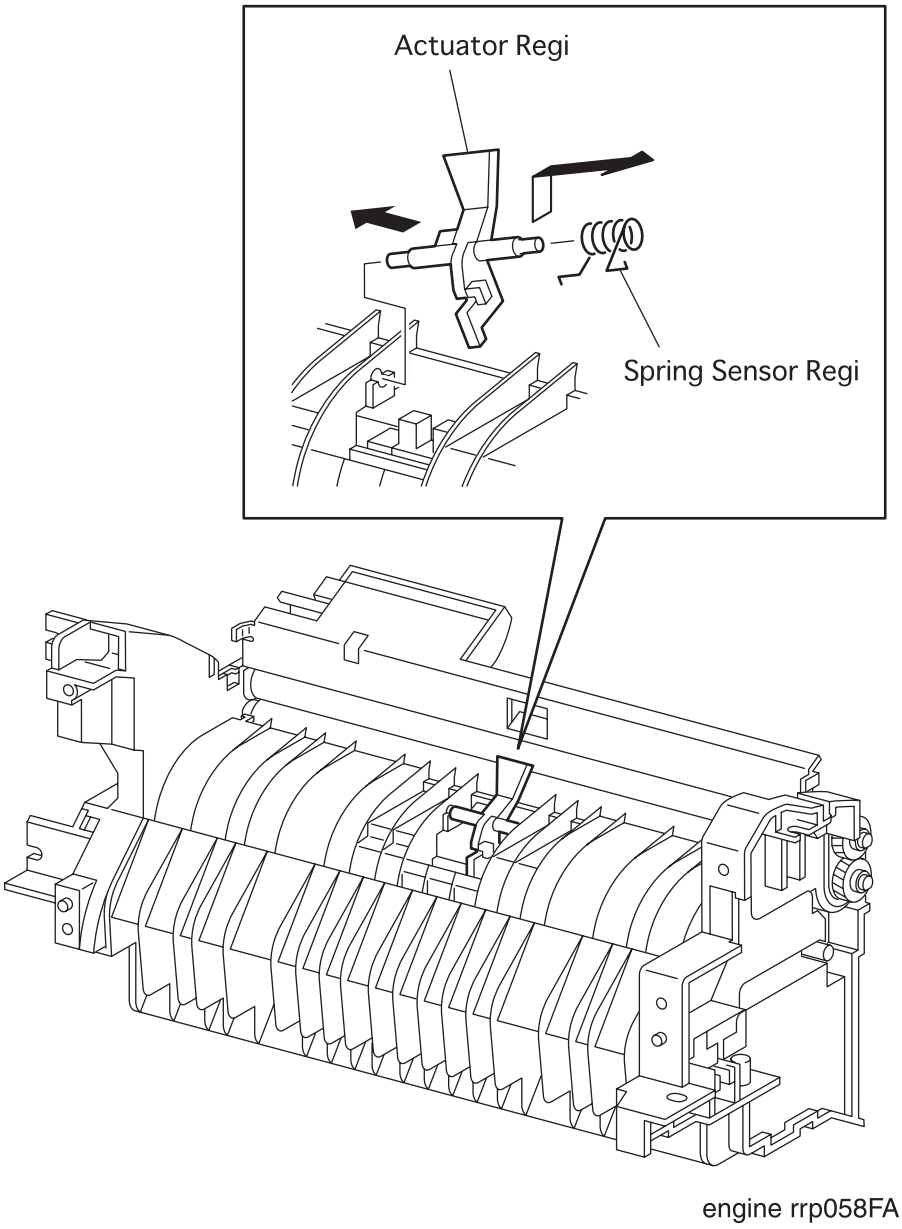

Figure 64. Spring Sensor Regi Removal

RRP 5.1.4 Spring Sensor Regi (PL5.1.11) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Open upward the *Chute Upper* (PL5.1.6) together with *Holder Toner Sensor* (PL5.1.2) from the *P/H Assy* (PL5.1.4).
8. Disengage the right hook of *Spring Sensor Regi* from the *P/H Assy*.
9. Holding the operating lever of *Actuator Regi*, move it to the left to remove the right shaft of *Actuator Regi* toward the upper right from the *P/H Assy* (PL 5.1.6).
10. Remove the *Spring Sensor Regi* inserted in the shaft of *Actuator Regi*.

Replacement

1. Insert the *Spring Sensor Regi* into the right shaft of *Actuator Regi* (PL5.1.10).
2. Holding the operating lever of *Actuator Regi*, insert the left shaft into the left hole in the *P/H Assy* (PL5.1.4).
3. Holding the operating lever of *Actuator Regi*, push the bracket of *P/H Assy* with the left shaft to deflect, and insert the right shaft of *Actuator Regi* into the right hole in the *P/H Assy*.
4. Engage the left hook of *Spring Sensor Regi* with the back of operating lever of *Actuator Regi*, and engage the right hook with the right hole in the *P/H Assy*.
5. Close downward the *Chute Upper* (PL5.1.6) together with *Holder Toner Sensor* (PL5.1.2) from the *P/H Assy*.
6. Mount the *P/H Assy* (RRP 5.1.1).
7. Mount the *Gear 14* (RRP 5.1.10).
8. Mount the *Shaft 14* (RRP 5.1.10).
9. Mount the *Chute MBF Assy* (RRP 4.1.1).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.5 Sensor Photo:Regi (PL5.1.12)

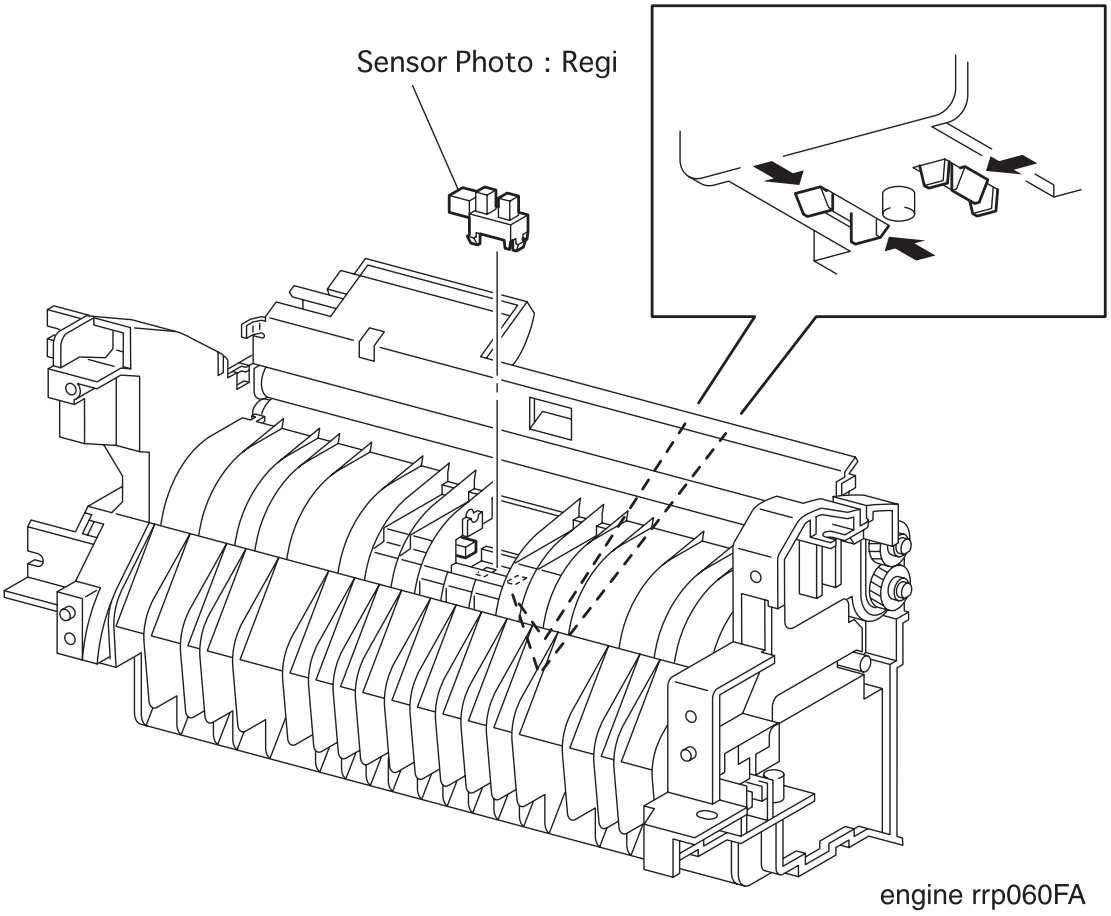

Figure 65. Sensor Photo:Regi Removal

RRP 5.1.5 Sensor Photo:Regi (PL5.1.12) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Open upward the *Chute Upper* (PL5.1.6) together with *Holder Toner Sensor* (PL5.1.2) from the *P/H Assy* (PL5.1.4).
8. Remove the *Actuator Regi* (RRP 5.1.4)
9. Unplug the connector (P/J432) from the *Sensor Photo*.
10. Disengage three hooks that secure the *Sensor Photo*, and remove the *Sensor Photo* from the rear side of *P/H Assy*.

Replacement

1. Aligning the position exactly, secure the *Sensor Photo* to the *P/H Assy* (PL5.1.4) with three hooks.
2. plug the connector (P/J432) in the *Sensor Photo*.
3. Mount the *Actuator Regi* (RRP 5.1.4).
4. Close down-ward the *Chute Upper* (PL5.1.6) together with *Holder Toner Sensor* (PL5.1.2) from the *P/H Assy*.
5. Mount the *P/H Assy* (RRP 5.1.1)
6. Mount the *Gear 14* (RRP 5.1.10).
7. Mount the *Shaft 14* (RRP 5.1.10).
8. Mount the *Chute MBF Assy* (RRP 4.1.1).
9. Mount the *Cover Front L/H* (RRP 1.1.10).
10. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.6 Spring Regi L (PL5.1.14)

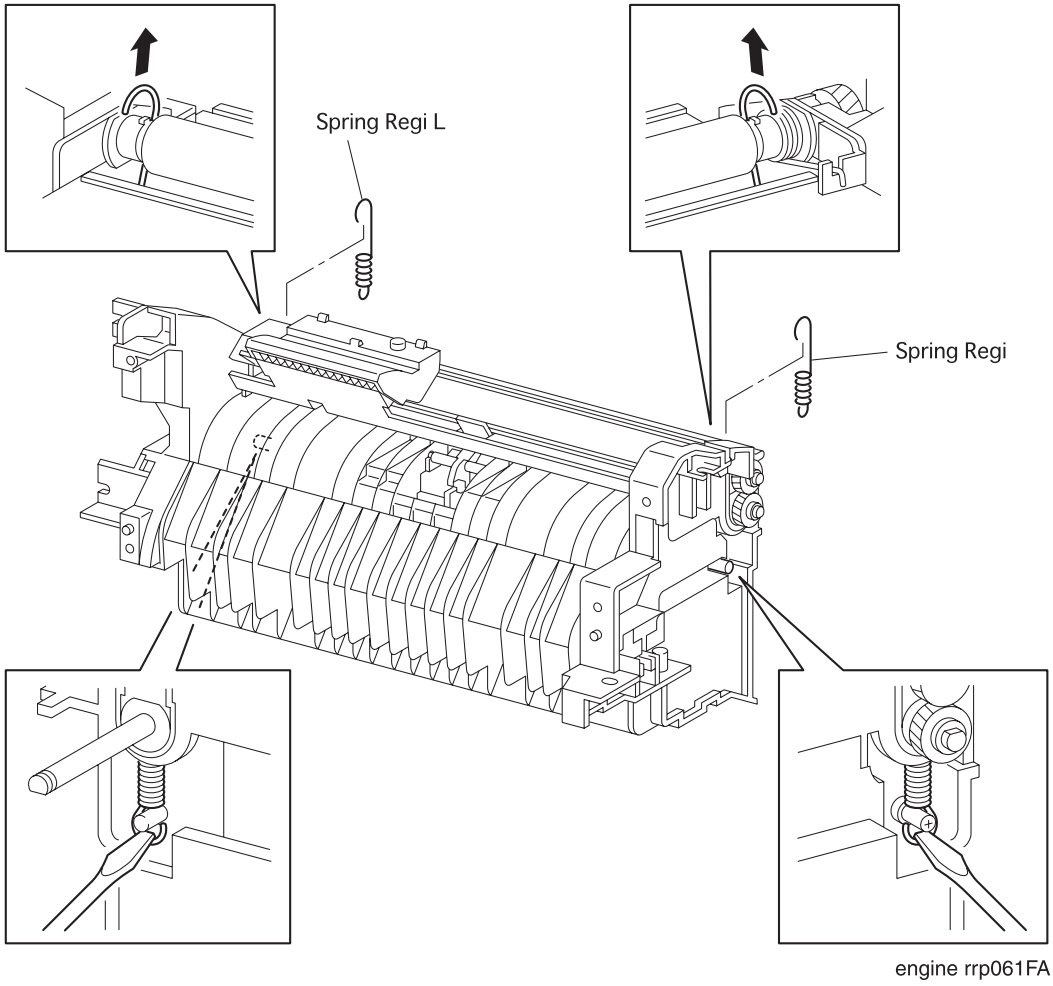

Figure 66. Spring Regi L Removal

RRP 5.1.6 Spring Regi L (PL5.1.14) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Using a small screwdriver, unhook the right *Spring Regi L* secured to the *Bearing Metal R* (PL5.1.31).
8. Using a small screwdriver, unhook the right *Spring Regi L* secured to the *Chute Bottom Upper* (PL5.1.20).
9. Using a small screwdriver, unhook the left *Spring Regi L* secured to the *Bearing Metal L* (PL5.1.13).
10. Using a small screwdriver, unhook the left *Spring Regi L* secured to the *Chute Bottom Upper*.
11. Draw downward the right *Spring Regi L* from the *P/H Assy* (PL5.1.4).
12. Draw downward the left *Spring Regi L* from the *P/H Assy*.

Replacement

1. From the left side of *P/H Assy* (PL5.1.4), pass the hook at the top of *Spring Regi L* through a section between *Roll Regi Metal* (PL5.1.5) and *Chute Inlet* (PL5.1.8).
2. From the *P/H Assy*, engage the hook at the top of left *Spring Regi L* with the *Bearing Metal L* (PL5.1.13).
3. From the *P/H Assy*, engage the hook at the bottom of left *Spring Regi L* with the *Screw Earth* (PL5.1.23).
4. From the right side of *P/H Assy*, pass the hook at the top of *Spring Regi L* through a section between *Roll Regi Metal* and *Chute Inlet*.
5. From the *P/H Assy*, engage the hook at the top of right *Spring Regi L* with the *Bearing Metal R* (PL5.1.31).
6. From the *P/H Assy*, engage the hook at the bottom of right *Spring Regi L* with the *Screw Earth*.
7. Mount the *P/H Assy* (RRP 5.1.1).
8. Mount the *Gear 14* (RRP 5.1.10).
9. Mount the *Shaft 14* (RRP 5.1.10).
10. Mount the *Chute MBF Assy* (RRP 4.1.1).
11. Mount the *Cover Front L/H* (RRP 1.1.10).
12. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.7 Gear Regi Metal(PL5.1.15)

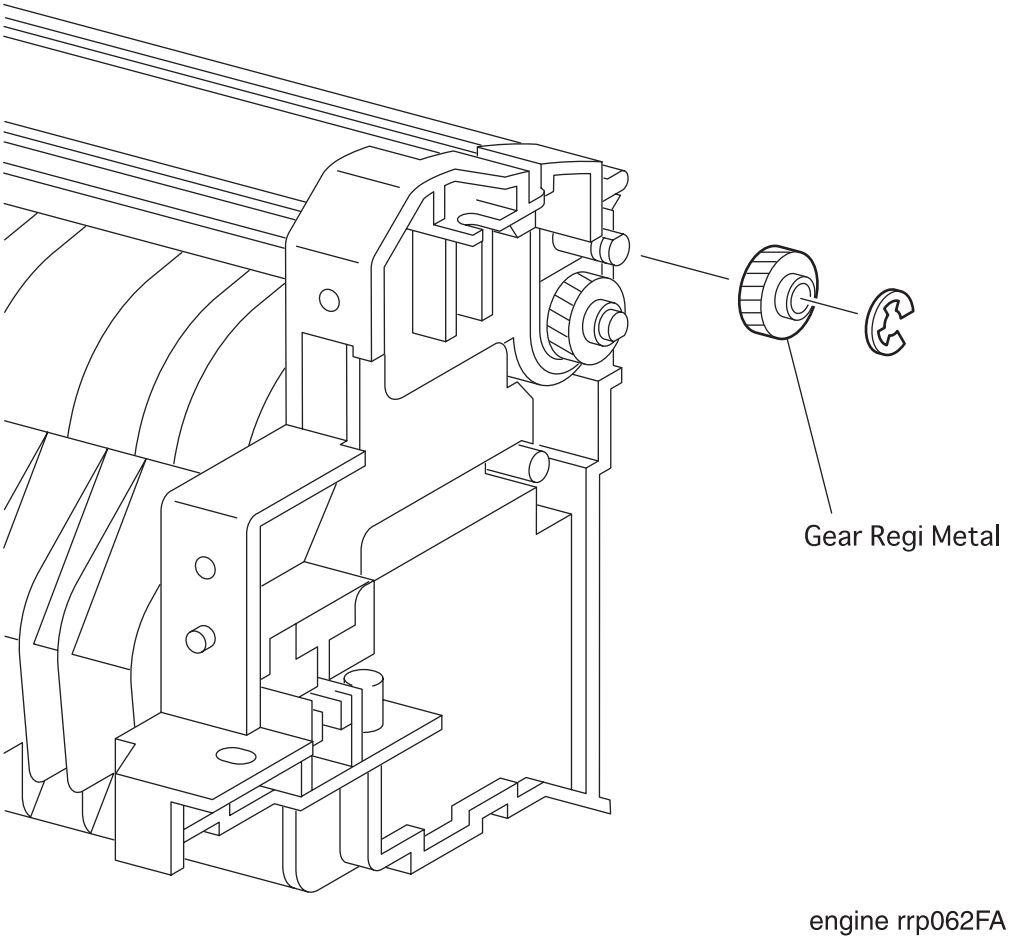

Figure 67. Gear Regi Metal Removal

RRP 5.1.7 Gear Regi Metal(PL5.1.15) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Disengage the E-ring that secures the *Gear Regi Metal* from the *P/H Assy* (PL5.1.4).
8. Draw the *Gear Regi Metal* from the *P/H Assy*.

Replacement

1. Mount the *Gear Regi Metal* on the *Roll Regi Metal* (PL5.1.5) from the *P/H Assy* (PL5.1.4).
2. Secure the *Gear Regi Metal* to the *Roll Regi Metal* of *P/H Assy* with the E-ring.
3. Mount the *P/H Assy* (RRP 5.1.1).
4. Mount the *Gear 14* (RRP 5.1.10).
5. Mount the *Shaft 14* (RRP 5.1.10).
6. Mount the *Chute MBF Assy* (RRP 4.1.1).
7. Mount the *Cover Front L/H* (RRP 1.1.10).
8. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.8 Gear Regi Rubber (PL5.1.16)

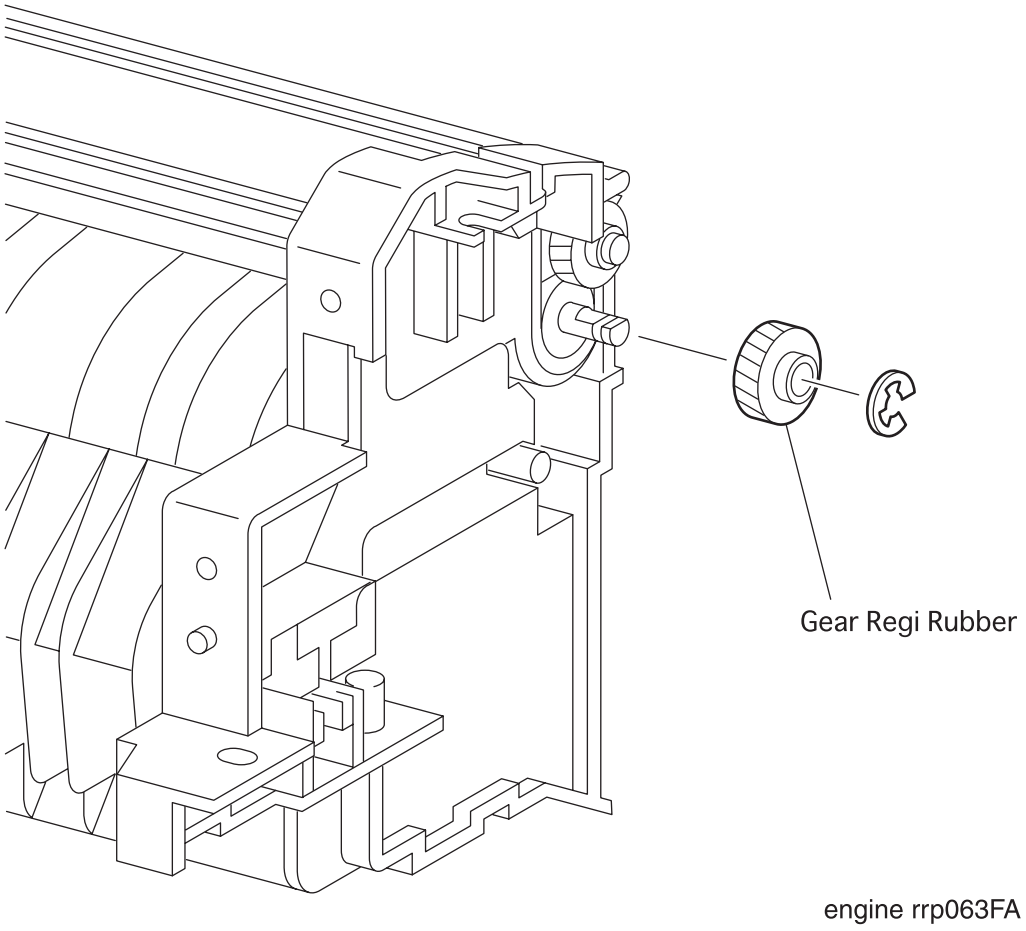

Figure 68. Gear regi Rubber Removal

RRP 5.1.8 Gear Regi Rubber (PL5.1.16) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Disengage the E-ring that secures the *Gear Regi Rubber* from the *P/H Assy* (PL5.1.4).
8. Draw the *Gear Regi Rubber* from the *P/H Assy*.

Replacement

1. Mount the *Gear Regi Rubber* on the *Roll Regi Rubber* (PL5.1.7) of the *P/H Assy* (PL5.1.4).
2. Secure the *Gear Regi Rubber* to the *Roll Regi Rubber* from *P/H Assy* with the E-ring.
3. Mount the *P/H Assy* (RRP 5.1.1).
4. Mount the *Gear 14* (RRP 5.1.10).
5. Mount the *Shaft 14* (RRP 5.1.10).
6. Mount the *Chute MBF Assy* (RRP 4.1.1).
7. Mount the *Cover Front L/H* (RRP 1.1.10).
8. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.9 Clutch Regi (PL5.1.19)

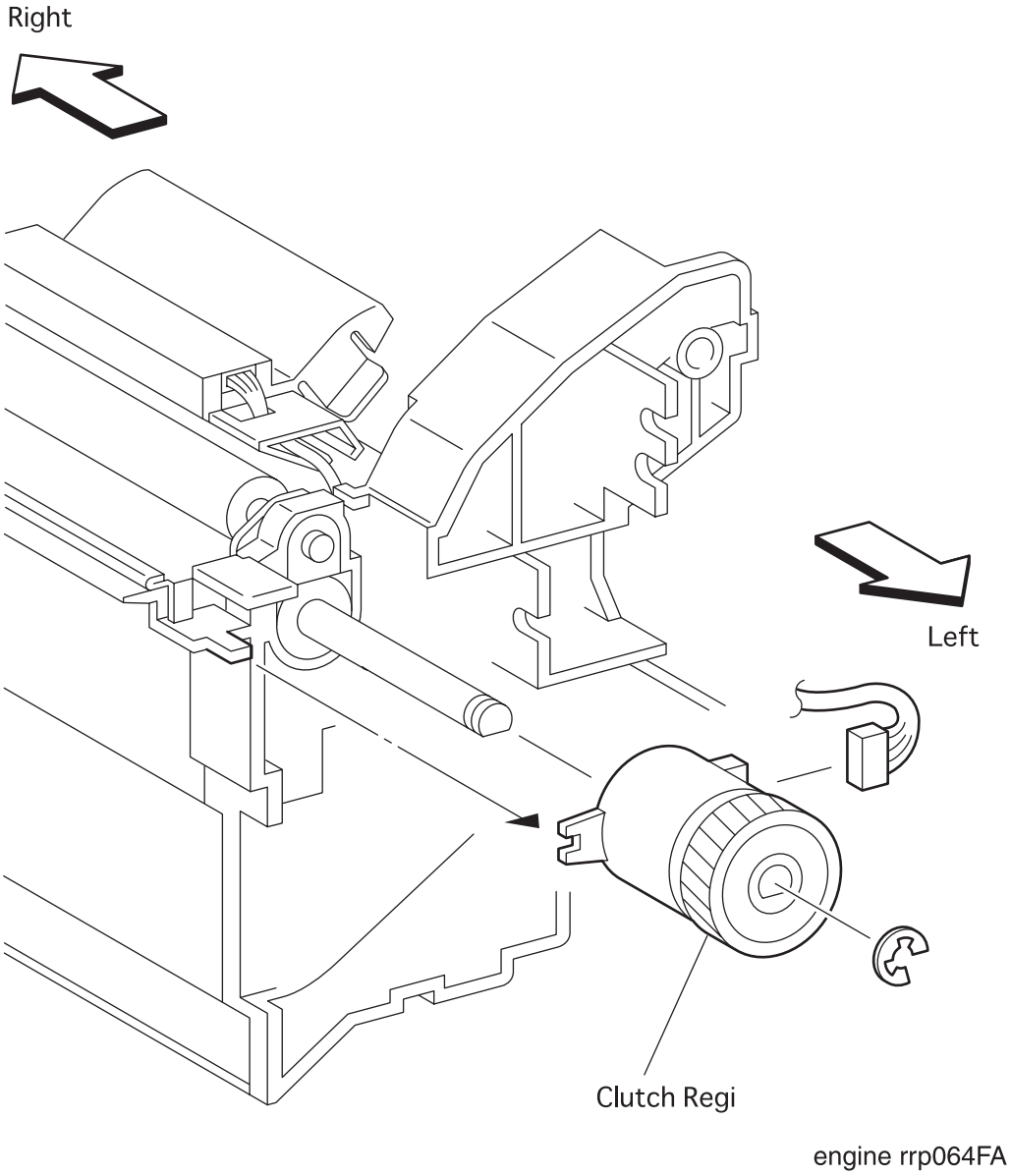

Figure 69. Clutch Regi Removal

RRP 5.1.9 Clutch Regi (PL5.1.19) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Unplug the connector (P/J433) of the *Clutch Regi*.
8. Disengage the E-ring that secures the *Clutch Regi* from the *P/H Assy* (PL5.1.4).
9. Draw the *Clutch Regi* from the *P/H Assy*.

Replacement

1. Mount the *Clutch Regi* on the *Roll Regi Rubber* (PL5.1.7) of the *P/H Assy* (PL5.1.4).
2. Secure the *Cluch Regi* to the *Roll Regi Rubber* from *P/H Assy* with the E-ring.
3. plug the connector (P/J433) in the *Clutch Regi*.
4. Mount the *P/H Assy* (RRP 5.1.1).
5. Mount the *Gear 14* (RRP 5.1.10).
6. Mount the *Shaft 14* (RRP 5.1.10).
7. Mount the *Chute MBF Assy* (RRP 4.1.1).
8. Mount the *Cover Front L/H* (RRP 1.1.10).
9. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.10 Shaft 14 (PL5.1.34) and Gear 14 (PL5.1.35)

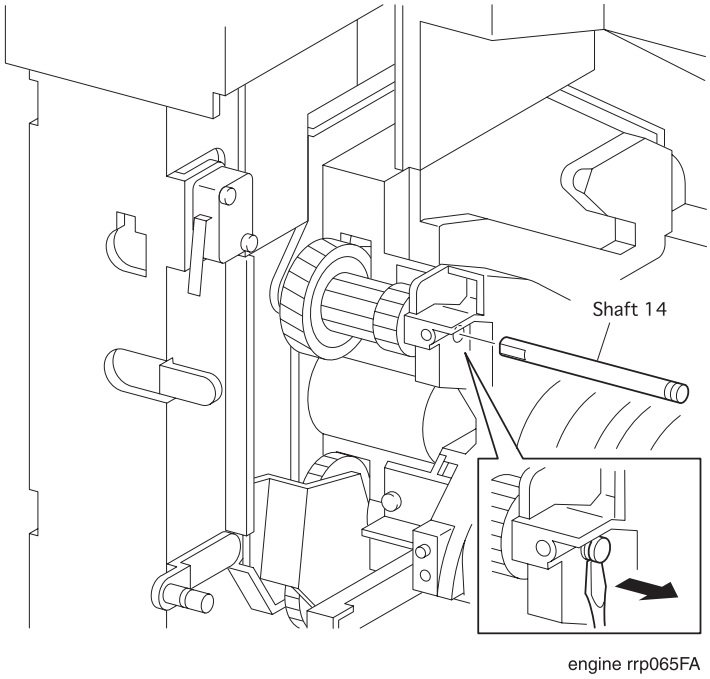

Figure 70. Shaft 14 Removal

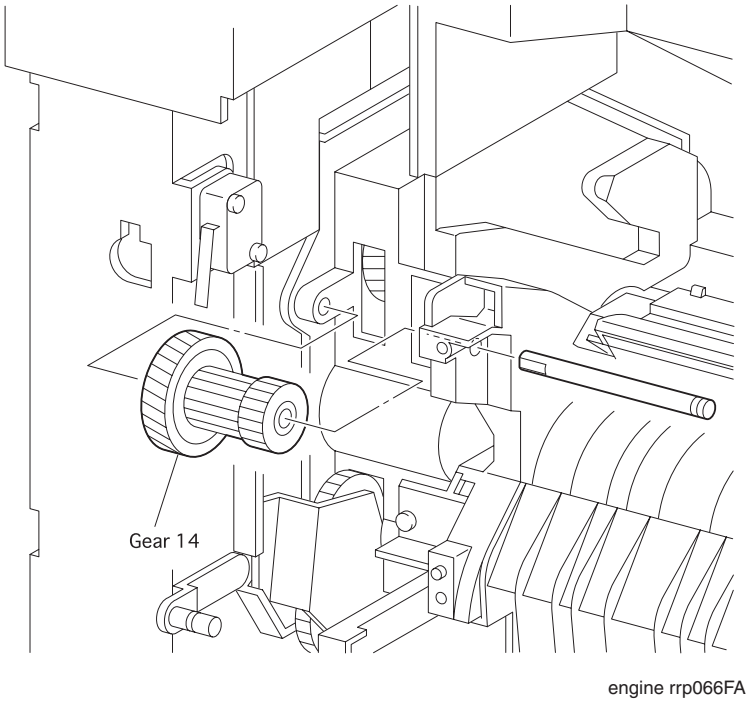

Figure 71. Gear 14 Removal

RRP 5.1.10 Shaft 14 (PL5.1.34) and Gear 14 (PL5.1.35) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).

NOTE

In the following steps, take care not to drop and then damage the *Gear 14*.

4. Holding the *Gear 14*, draw off the *Shaft 14* that secures the *P/H Assy* (PL5.1.4) from the printer using long-nose pliers.
5. Remove the *Gear 14* from the printer.

Replacement

1. Align the the *Gear 14* with its mount position to the printer.
2. Insert the *Shaft 14* from the hole in the *P/H Assy* (PL5.1.4), and secure the *Gear 14* to the printer.
3. Mount the *Chute MBF Assy* (RRP 4.1.1).
4. Mount the *Cover Front L/H* (RRP 1.1.10).
5. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 5.1.11 Kit Toner Sensor (with 1,2,33)(Reference Only)

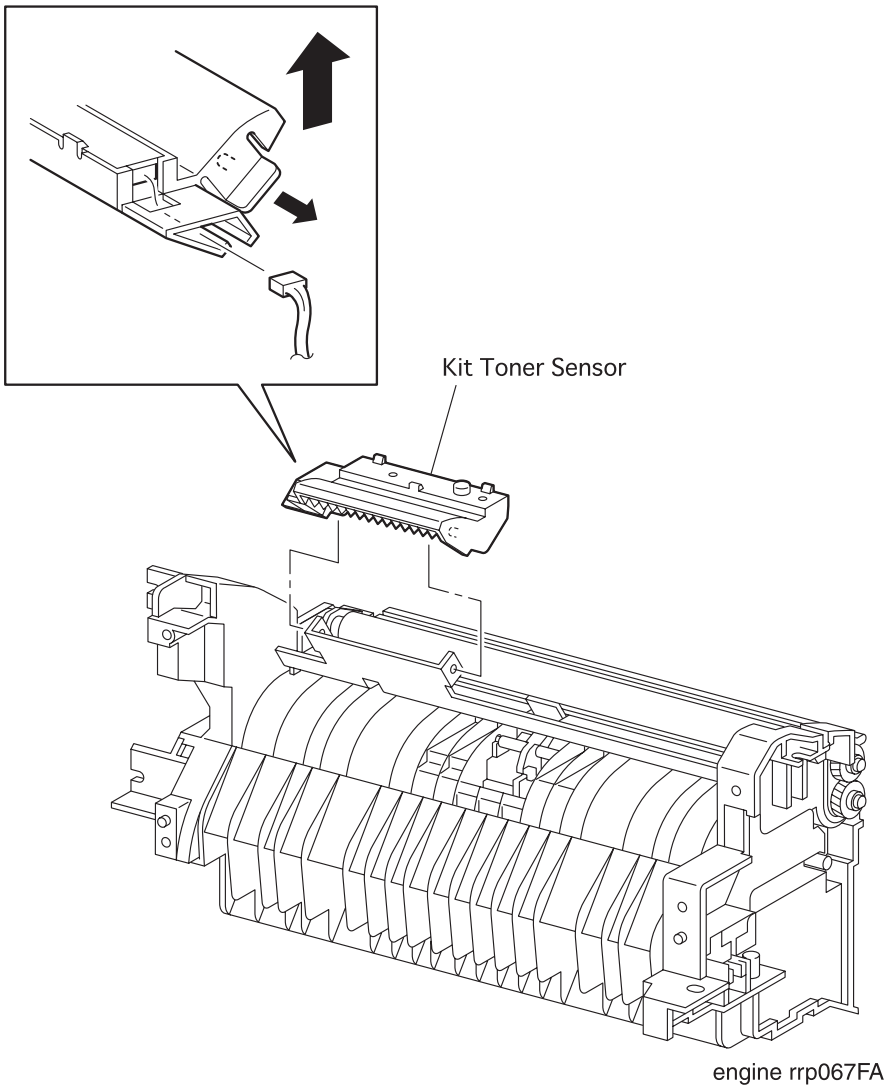

Figure 72. Kit Toner Sensor Removal

RRP 5.1.11 Kit Toner Sensor (with 1,2,33)(Reference Only) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Unplug the connector (P/J421)on the *Kit Toner Sensor* from the *P-H Assy*(PL5.1.4).
8. Deflecting the left bracket of *Kit Toner Sensor*, from the *P/H Assy* (PL5.1.4), desengage the left boss of *Kit Toner Sensor* from a hole in the bracket of *Chute Upper Assy* (PL5.1.6).
9. Desengage the right boss of *Kit Toner Sensor* from the hole in the right bracket of *Chute Upper Assy*, and remove the *Kit Toner Sensor* from the *P/H Assy*.

Replacement

1. Align the *Kit Toner Sensor* with its mount position to the *P/H Assy* (PL5.1.4).
2. Engage the right boss of *Kit Toner Sensor* with the hole in the right bracket of *Chute Upper Assy* (PL5.1.6).
3. Deflecting the left bracket of *Kit Toner Sensor*, from the *P/H Assy*, engage the left boss of *Kit Toner Sensor* with a hole in the bracket of *Chute Upper Assy.*
4. Plug the connector (P/J421) to the *Kit Toner Sensor* from the *P-H Assy*.
5. Mount the *P/H Assy* (RRP 5.1.1).
6. Mount the *Gear 14* (RRP 5.1.10).
7. Mount the *Shaft 14* (RRP 5.1.10).
8. Mount the *Chute MBF Assy* (RRP 4.1.1).
9. Mount the *Cover Front L/H* (RRP 1.1.10).
10. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 6.1.1 BTR Assy (PL6.1.2)

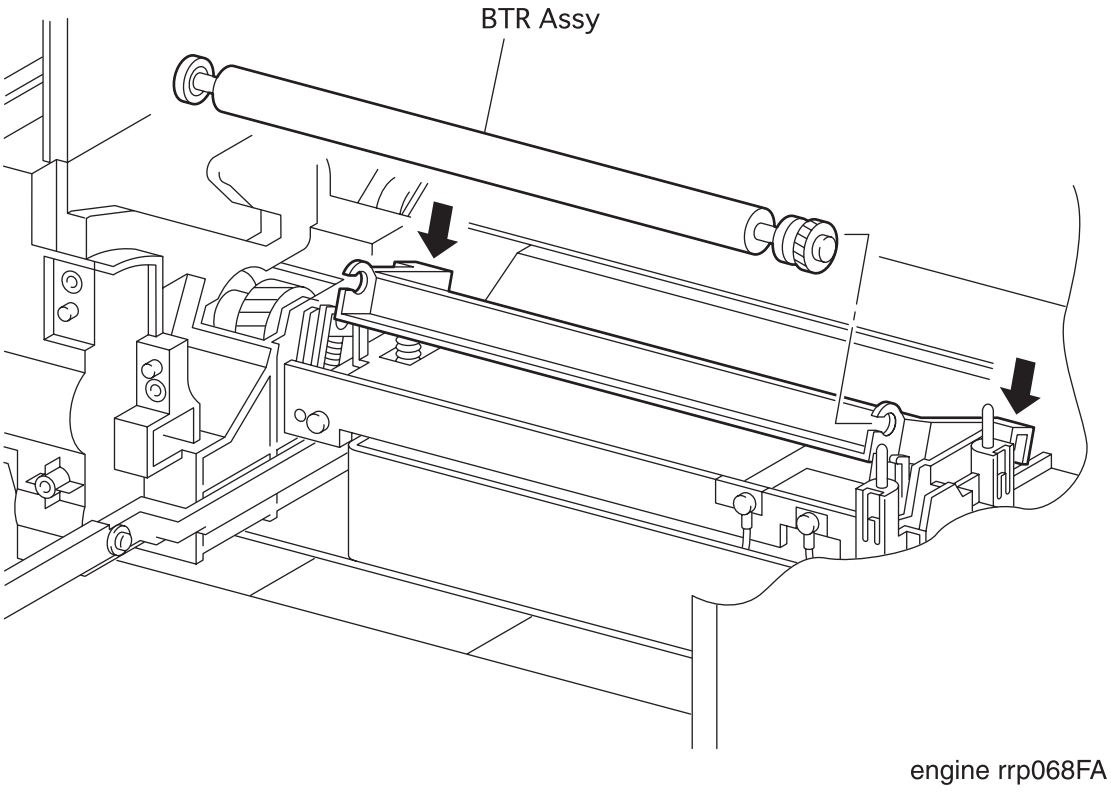

Figure 73. BTR Assy Removal

RRP 6.1.1 BTR Assy (PL6.1.2) continued

Removal

CAUTION

In the following steps, do not touch the roll surface of *BTR Assy* and the *Detack Saw* of *Chute Trans Assy* (PL6.1.3).

CAUTION

In removing the *BTR Assy* from the printer, take care not to damage the roll of *BTR Assy*.

NOTE

After removing the *BTR Assy*, cover it with A3/Ledger size paper and store it at a safety place.

1. Open the *Cover Assy Front* (PL1.1.6) from the printer.
2. Push to unlock the left and right latches of *BTR Chute Assy* (PL6.1.1) that secure the *BTR Assy* from the printer.
3. Holding the left and right knobs of *BTR Assy*, remove the *BTR Assy* from the *BTR Chute Assy*.

Replacement

CAUTION

In replacing the *BTR Assy* with a new one, peel off the stripping paper that protects the roll of *BTR Assy* before mounting.

CAUTION

In the following steps, do not touch the roll surface of *BTR Assy* and the *Detack Saw* of *Chute Trans Assy* (PL6.1.3).

CAUTION

In removing the *BTR Assy* from the printer, take care not to damage the roll of *BTR Assy*.

1. Holding the left and right knobs of *BTR Assy*, engage the left and right shafts of *BTR Assy* with the left and right latches of *BTR Chute Assy* (PL6.1.1) in the printer.
2. Pushing the left and right latches of *BTR Chute Assy*, secure the *BTR Assy*.
3. Mount the *Chute MBF Assy* (RRP 4.1.1).
4. Mount the *Cover Assy Front* (RRP 1.1.6).

RRP 6.1.2 Chute Trans Assy (PL6.1.3)

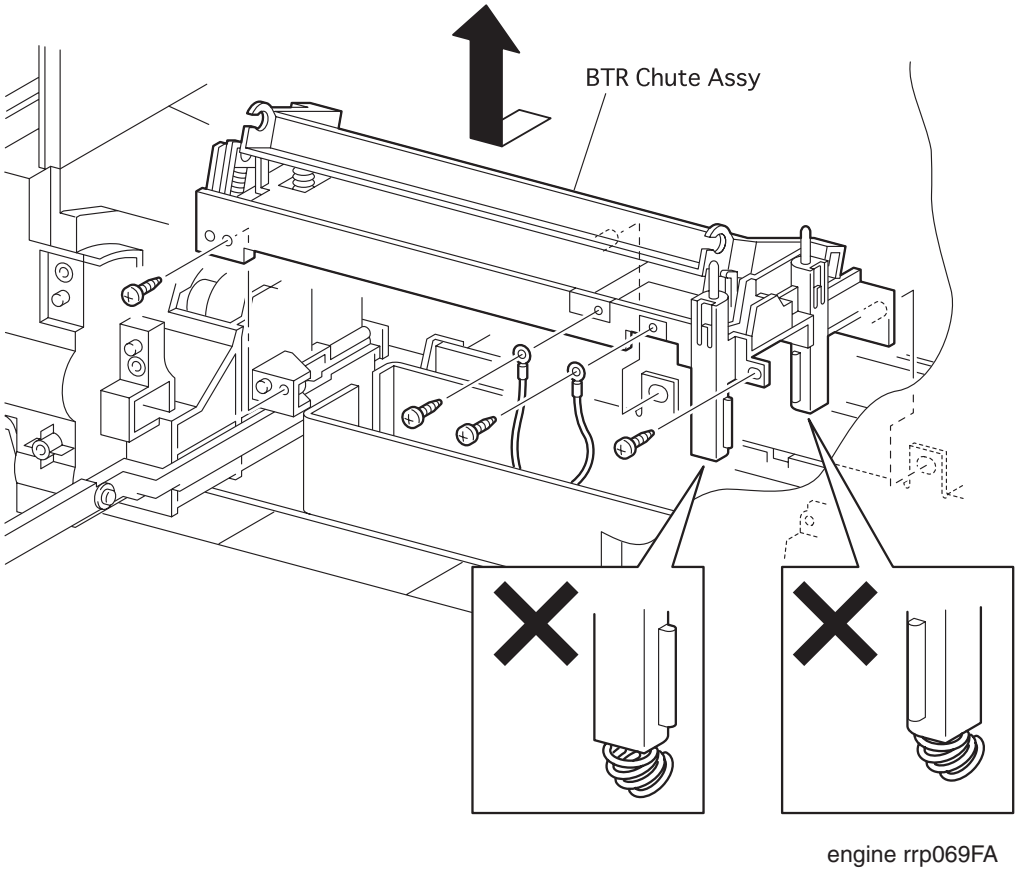

Figure 74. Chute Trans Assy Removal

RRP 6.1.2 Chute Trans Assy (PL6.1.3) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Remove the *BTR Assy* (RRP 6.1.1).
8. From the printer, remove the one screw securing the earth of *Wire Assy DTS* (PL6.1.10) to the *Chute Trans Assy*.
9. From the printer, remove the one screw securing the earth of *Wire Assy TR* (PL6.1.11) to the *Chute Trans Assy*.
10. Remove the two screws securing the *Chute Trans Assy* to the printer.
11. Remove the *Chute Trans Assy* from the printer.

Replacement

Do not bend both springs of the Chute Trans Assy(placed the side of CR and the side of DB),and attach them in accordance with the following procedures.

1. Align the *Chute Trans Assy* with its mount position to the printer.
2. Secure the *Chute Trans Assy* to the printer with two screws.
3. Secure the earth of *Wire Assy DTS* (PL6.1.10) to the front left hole in the *Chute Trans Assy* with one screw.
4. Secure the earth of *Wire Assy TR* (PL6.1.11) to the front right hole in the *Chute Trans Assy* with one screw.
5. Mount the *BTR Assy* (RRP 6.1.1).
6. Mount the *P/H Assy* (RRP 5.1.1).
7. Mount the *Gear 14* (RRP 5.1.10).
8. Mount the *Shaft 14* (RRP 5.1.10).
9. Mount the *Chute MBF Assy* (RRP 4.1.1).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 6.1.3 Fuser Assy (PL6.1.7)

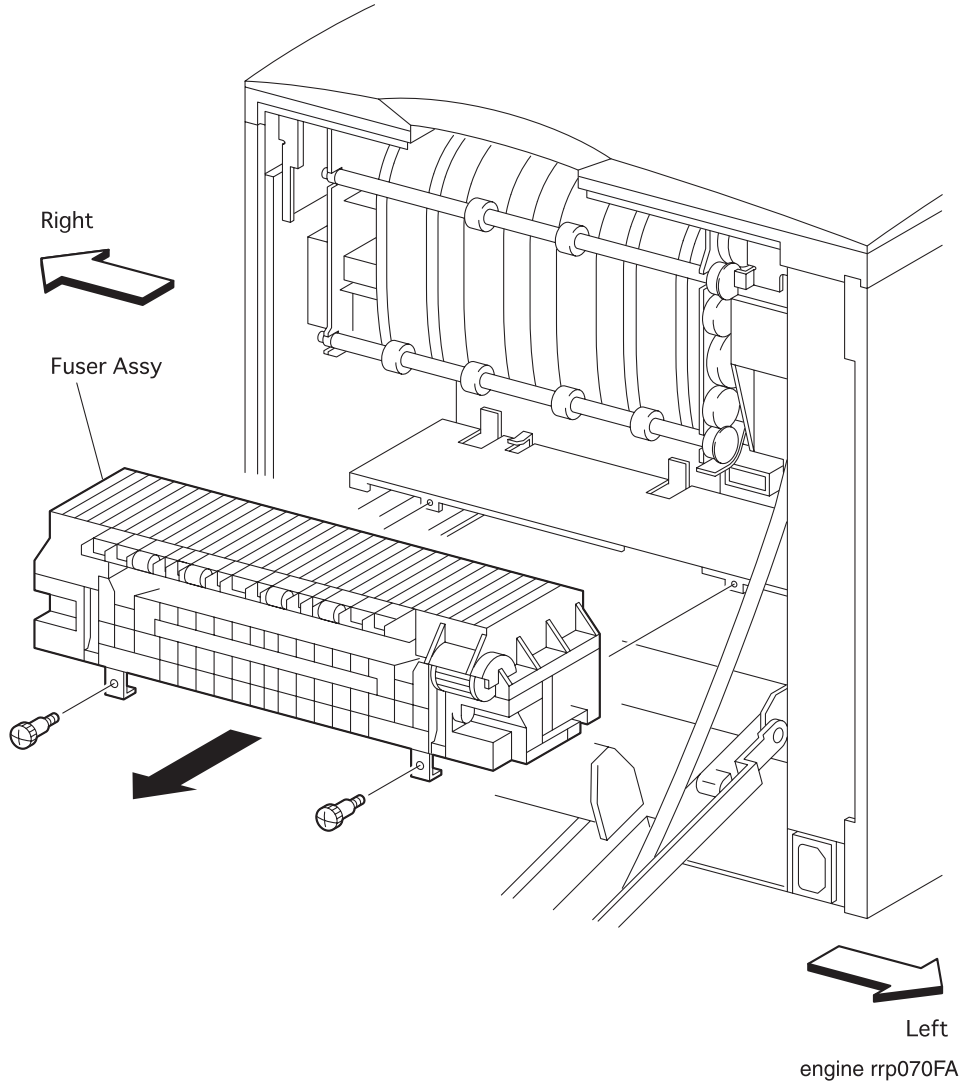

Figure 75. Fuser Assy Removal

RRP 6.1.3 Fuser Assy (PL6.1.7) continued

Removal

1. Open the *Cover Assy Rear* from the printer.
2. Remove the two screws securing the *Fuse Assy* to the printer.
3. Remove the *Fuser Assy* from the Printer.

Replacement

1. Align the *Fuser Assy* with its mount position to the printer.
2. Secure the *Fuser Assy* to the printer with two screws.
3. Close the *Cover Assy Rear*.

RRP 6.1.4 Harness Assy Fuser-M (PL6.1.12)

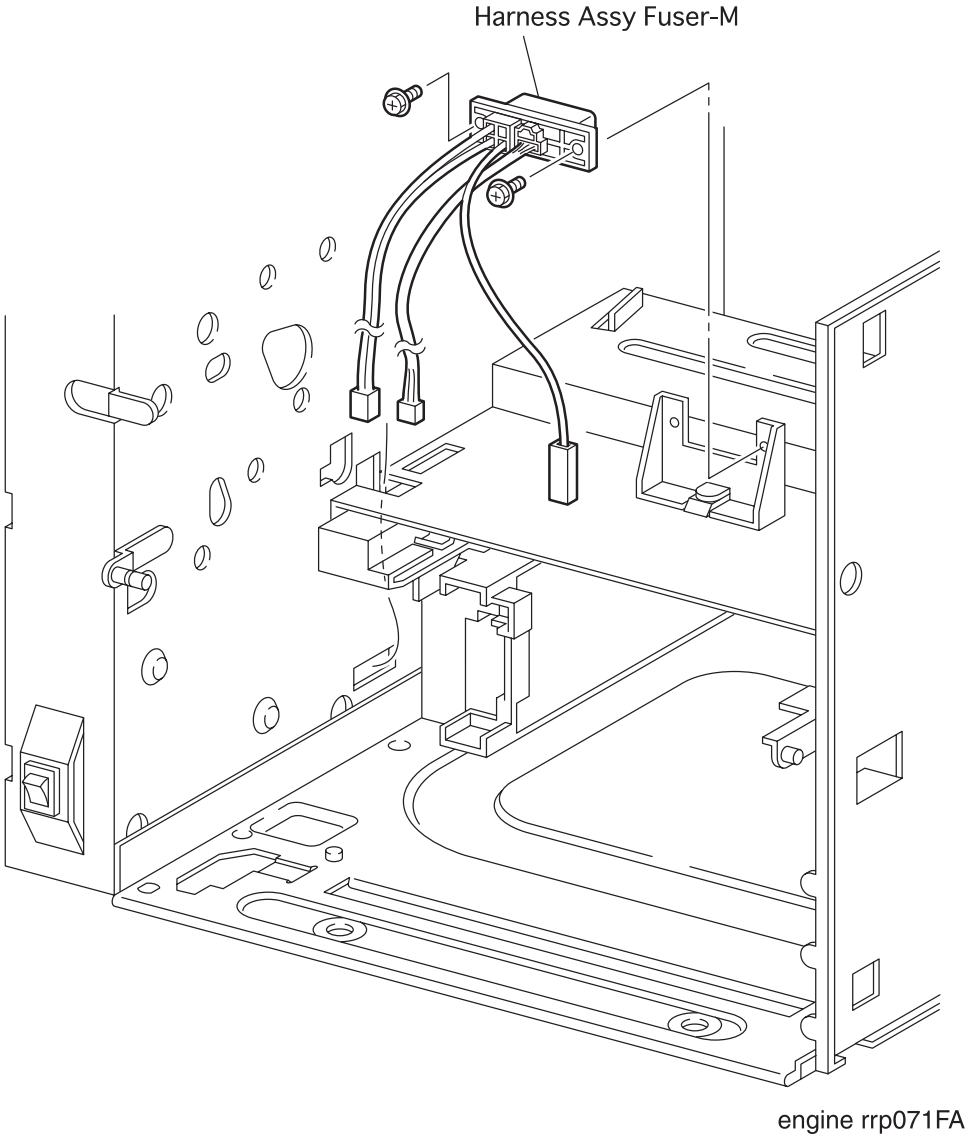

Figure 76. Harness Assy Fuser-M Removal

RRP 6.1.4 Harness Assy Fuser-M (PL6.1.12) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Fuser Assy* (RRP 6.1.3).
5. Remove the *Cover Assy* I/F (RRP 1.1.2).
6. Remove the *Cover Left* (RRP 1.1.1).
7. Remove the *Cover Assy Top* (RRP 1.1.4).
8. Remove the *Chute MBF Assy* (RRP 4.1.1).
9. Remove the *Shaft 14* (RRP 5.1.10).
10. Remove the *Gear 14* (RRP 5.1.10).
11. Remove the *P/H Assy* (RRP 5.1.1).
12. Remove the *Chute Trans Assy* (RRP 6.1.2).
13. Remove the *Plate Assy Left* (RRP 9.1.1).
14. Remove the *CRU Top Guide Assy* (RRP 8.1.1)
15. Remove the *Plate Handle* (RRP 9.1.3).
16. Remove the *PWBA HKB26 MCU* (RRP 10.1.7).
17. Remove the *Motor Assy Main* (RRP 8.1.4)
18. Remove the *PWBA HKB PS* (RRP 10.1.9).
19. Remove the *Gear Assy Drive* (RRP 8.1.3).
20. Unplug the connector (P/J262) on the *PWBA HVPS* (PL10.1.20) from the printer.
21. Remove the one screw securing the *Housing HVPS* (PL10.1.21) together with *PWBA HVPS* from the printer.
22. Remove the *Housing HVPS* together with *PWBA HVPS* from the printer.
23. Unplug the connector (P/J34) from the *PWBA HKB26 MCU* (PL10.1.13).
24. Unplug the connector (P/J11) from the *PWBA HKB PS* (PL10.1.17).
25. Pull the *Harness Assy Fuser-M* from the left hole in the printer.
26. Remove the two screws securing the *Harness Assy Fuser-M* to the printer.
27. Remove the *Harness Assy Fuser-M* from the printer.

RRP 6.1.4 Harness Assy Fuser-M (PL6.1.12) continued

Replacement

1. Align the *Harness Assy Fuser-M* with its mount position to the printer.
2. Secure the *Harness Assy Fuser-M* to the printer with two screws.
3. Pass the *Harness Assy Fuser-M* through the left hole in the printer.
4. Plug the connector (P/J11) to the *PWBA HKB PS* (PL10.1.17).
5. Plug the connector (P/J34) to the *PWBA HKB26 MCU* (PL10.1.13).
6. Align the *Housing HVPS* (PL10.1.21) together with *PWBA HVPS* (PL10.1.20) to the printer.
7. Secure the *Housing HVPS* together with *PWBA HVPS* to the printer with one screw.
8. Plug the connector (P/J262) to the *PWBA HVPS* (PL10.1.20).
9. Mount the *Gear Assy Drive* (RRP 8.1.3).
10. Mount the *PWBA HKB PS* (RRP 10.1.9).
11. Mount the *Motor Assy Main* (RRP 8.1.4).
12. Mount the *PWBA HKB26 MCU* (RRP 10.1.7).
13. Mount the *Plate Handle* (RRP 9.1.3).
14. Mount the *CRU Top Guide Assy* (RRP 8.1.1)
15. Mount the *Plate Assy Left* (RRP 9.1.1).
16. Mount the *Chute Trans Assy* (RRP 6.1.2).
17. Mount the *P/H Assy* (RRP 5.1.1).
18. Mount the *Gear 14* (RRP 5.1.10).
19. Mount the *Shaft 14* (RRP 5.1.10).
20. Mount the *Chute MBF Assy* (RRP 4.1.1).
21. Mount the *Cover Assy Top* (RRP 1.1.4).
22. Mount the *Cover Left* (RRP 1.1.1).
23. Mount the *Cover Assy I/F* (RRP 1.1.2).
24. Mount the *Fuser Assy* (RRP 6.1.3).
25. Mount the *Cover Assy Rear* (RRP 1.2.3).
26. Mount the *Cover Front L/H* (RRP 1.1.10).
27. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 6.1.4 Harness Assy Fuser-M (PL6.1.12) continued

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RRP 7.1.1 Eliminator Assy Exit (PL7.1.1)

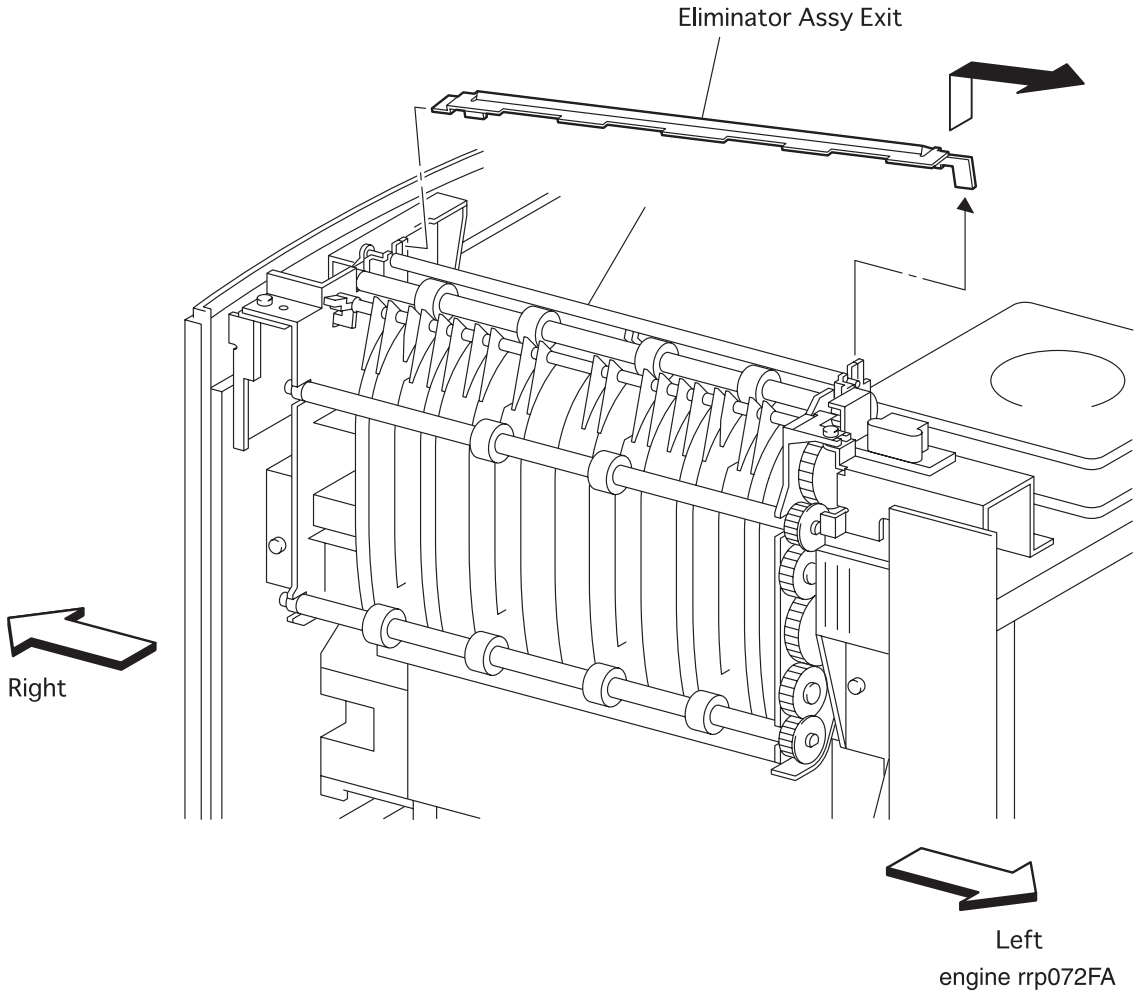

Figure 77. Eliminator Assy Exit Removal

RRP 7.1.1 Eliminator Assy Exit (PL7.1.1) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy Top* (RRP 1.1.4).

NOTE

In the following steps, take care not to damage the *Actuator Full Stack* (PL7.1.2).

5. Raising upward the left end of *Eliminator Assy Exit* from the left mounting position of the *Chute Assy Exit*, remove it from the printer.
6. Draw the right end of *Eliminator Assy Exit* from the right mounting position of the *Chute Assy Exit*.

Replacement

NOTE

In the following steps, take care not to damage the *Actuator Full Stack* (PL7.1.3).

1. Insert the right end of *Eliminator Assy Exit* into the right mounting position of the *Chute Assy Exit* from the printer.
2. Insert the left end of *Eliminator Assy Exit* into the left mounting position of the *Chute Assy Exit*.
3. Mount the *Cover Assy Top* (RRP 1.1.4).
4. Mount the *Cover Assy Rear* (RRP 1.2.3).
5. Mount the *Cover Front L/H* (RRP 1.1.10).
6. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 7.1.2 Actuator Full Stack (PL7.1.2)

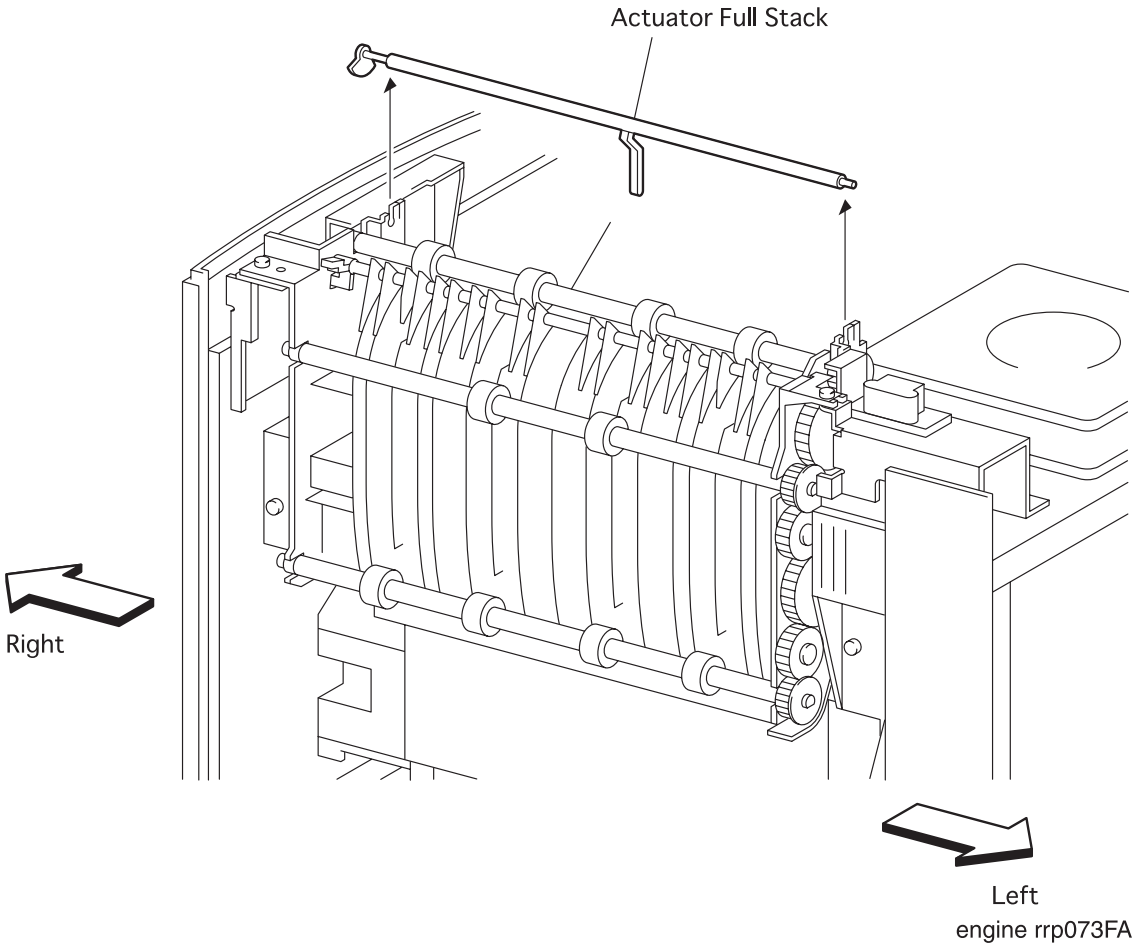

Figure 78. Actuator Full Stack Removal

RRP 7.1.2 Actuator Full Stack (PL7.1.2) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy Top* (RRP 1.1.4).

NOTE

In the following steps, take care not to damage the *Actuator Full Stack* (PL7.1.2).

5. Remove the *Eliminator Assy Exit* (RRP 7.1.1).
6. Raise the left shaft of *Actuator Full Stack* to remove from the left bearing of *Chute Assy Exit* in the printer.
7. Draw the right shaft of *Actuator Full Stack* from the right bearing of *Chute Assy Exit*, and remove the *Actuator Full Stack*.

Replacement

NOTE

In the following steps, take care not to damage the *Actuator Full Stack*.

1. Insert the right shaft of *Actuator Full Stack* into the right bearing of *Chute Assy Exit*.
2. Insert the left shaft of *Actuator Full Stack* into the left bearing of *Chute Assy Exit*.
3. Mount the *Eliminator Assy Exit* (RRP 7.1.1)
4. Mount the *Cover Assy Top* (RRP 1.1.4).
5. Mount the *Cover Assy Rear* (RRP 1.2.3).
6. Mount the *Cover Front L/H* (RRP 1.1.10).
7. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 7.1.3 Bearing Exit (PL7.1.6) ,Bearing MID (PL7.1.25) and Roll Assy MID-1(PL7.1.7)

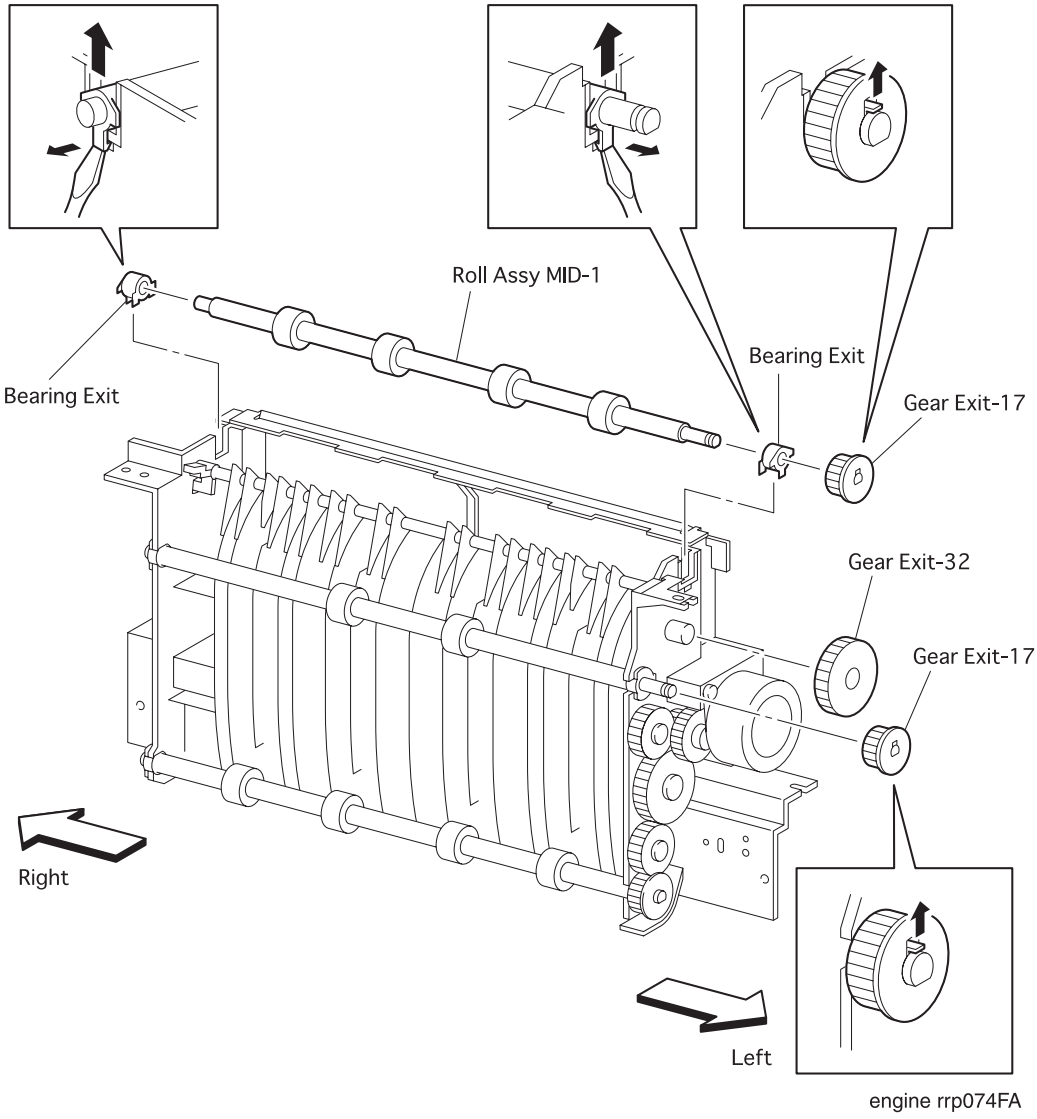

Figure 79. Bearing Exit ,Bearing MID and Roll Assy MID-1 Removal(1)

RRP 7.1.3 Bearing Exit (PL7.1.6) ,Bearing MID (PL7.1.25) and Roll Assy MID-1(PL7.1.7) continued

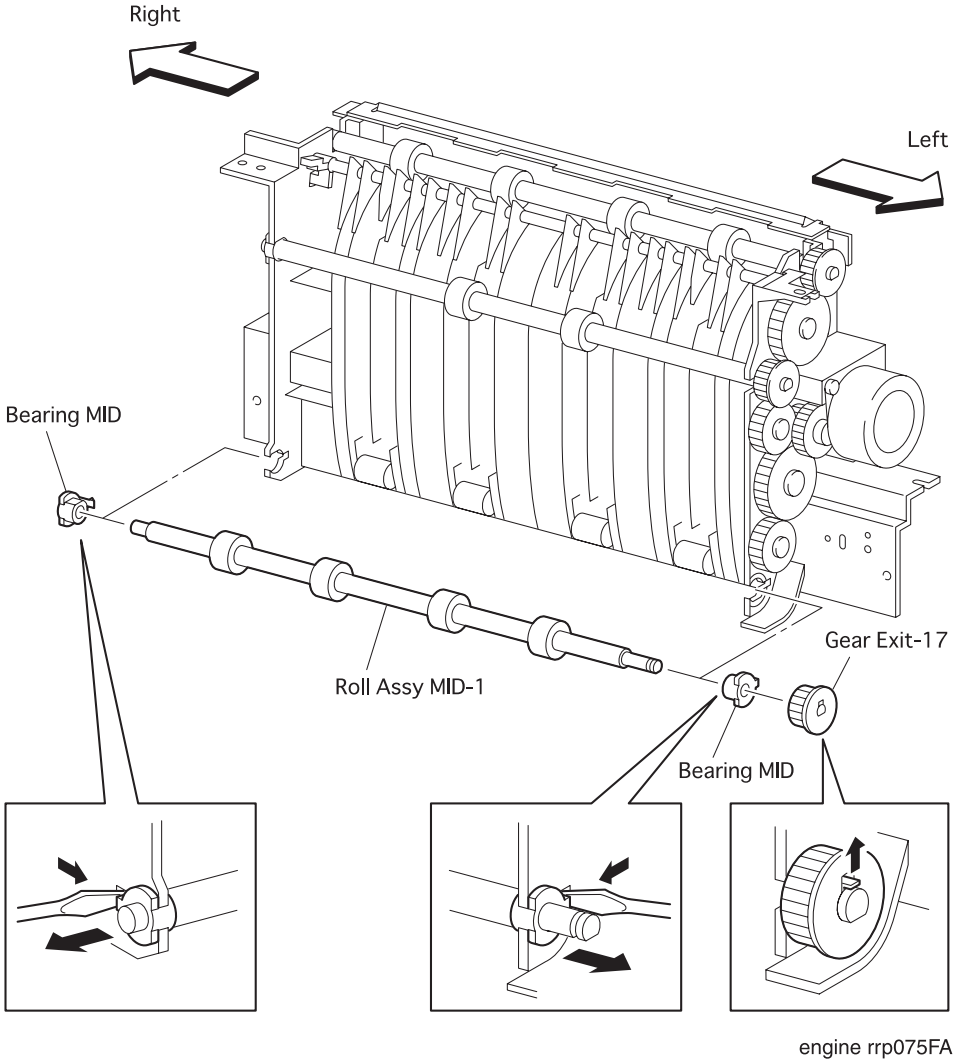

Figure 80. Bearing Exit ,Bearing MID and Roll Assy MID-1 Removal

RRP 7.1.3 Bearing Exit (PL7.1.6) ,Bearing MID (PL7.1.25) and Roll Assy MID-1(PL7.1.7) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Plate Assy left* (RRP 9.1.1).
8. Remove the *Cover Interlock* (RRP 9.1.18).
9. Remove the *Eliminator Assy Exit* (RRP 7.1.1)
10. Remove the *Chute Assy Exit* (RRP 7.1.8).
11. Unhook the *Gear Exit-17* (PL7.1.5) secured to the upper *Roll Assy MID-1* from the *Chute Assy Exit*.
12. Draw the *Gear Exit-17* from the upper *Roll Assy MID-1*.
13. Unhook the *Gear Exit-17* secured to the *Roll Assy MID-2* (PL7.1.11) from the *Chute Assy Exit*.
14. Draw the *Gear Exit-17* from the *Roll Assy MID-2*.
15. Remove the *Gear Exit-32* (PL7.1.23) from the *Chute Assy Exit*.
16. Unhook the *Bearing Exit* that secures the left and right shafts of upper *Roll Assy MID-1* from the *Chute Assy Exit*.
17. Remove the upper *Roll Assy MID-1* together with the left and right *Bearing Exits* on the *Roll Assy MID-1* from the *Chute Assy Exit*.
18. Draw the left and right *Bearing Exits* from the *Roll Assy MID-1*.
19. Unhook the *Gear Exit-17* secured to the lower *Roll Assy MID-1* from the *Chute Assy Exit*.
20. Draw the *Gear Exit-17* from the lower *Roll Assy MID-1*.
21. Unhook the *Bearing MID* that secures the left and right shafts of lower *Roll Assy MID-1* from the *Chute Assy Exit*.
22. Remove the lower *Roll Assy MID-1* together with the left and right *Bearing MIDs* on the *Roll Assy MID-1* from the *Chute Assy Exit*.
23. Draw the left and right *Bearing MIDs* from the *Roll Assy MID-1*.

RRP 7.1.3 Bearing Exit (PL7.1.6) ,Bearing MID (PL7.1.25) and Roll Assy MID-1(PL7.1.7) continued

Replacement

1. Insert the *Bearing MID* into the left and right shafts of lower *Roll Assy MID-1*.
2. Mount the lower *Roll Assy MID-1* together with the left and right *Bearing MIDs* on the *Roll Assy MID-1* to the *Chute Assy Exit*.
3. Secure the left and right shafts of lower *Roll Assy MID-1* to the *Chute Assy Exit* with the hook of *Bearing MID*.
4. Insert the *Gear Exit-17* (PL7.1.5) into the shaft of lower *Roll Assy MID-1* from the *Chute Assy Exit*.
5. Hook the *Gear Exit-17* to the shaft of lower *Roll Assy MID-1*.
6. Insert the *Bearing Exit* into the left and right shafts of upper *Roll Assy MID-1*.
7. Mount the upper *Roll Assy MID-1* together with the left and right *Bearing Exits* on the *Roll Assy MID-1* to the *Chute Assy Exit*.
8. Secure the left and right shafts of upper *Roll Assy MID-1* to the *Chute Assy Exit* with the hook of *Bearing Exit*.
9. Aligning the position exactly, insert the *Gear Exit-32* (PL7.1.23) into the *Chute Assy Exit*.
10. Insert the *Gear Exit-17* into the shaft of *Roll Assy MID-2* (PL7.1.11) from the *Chute Assy Exit*.
11. Hook the *Gear Exit-17* to the shaft of *Roll Assy MID-2*.
12. Insert the *Gear Exit-17* into the shaft of upper *Roll Assy MID-1* from the *Chute Assy Exit*.
13. Hook the *Gear Exit-17* to the shaft of upper *Roll Assy MID-1*.
14. Mount the *Chute Assy Exit* (RRP 7.1.8).
15. Mount the *Eliminator Assy Exit* (RRP 7.1.1).
16. Mount the *Cover Interlock* (RRP 9.1.18).
17. Mount the *Plate Assy left* (RRP 9.1.1).
18. Mount the *Cover Assy Top* (RRP 1.1.4).
19. Mount the *Cover Left* (RRP 1.1.1).
20. Mount the *Cover Assy I/F* (RRP 1.1.2).
21. Mount the *Cover Assy Rear* (RRP 1.2.3).
22. Mount the *Cover Front L/H* (RRP 1.1.10).
23. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 7.1.4 Bearing MID (PL7.1.25) and Roll Assy MID-2(PL7.1.11)

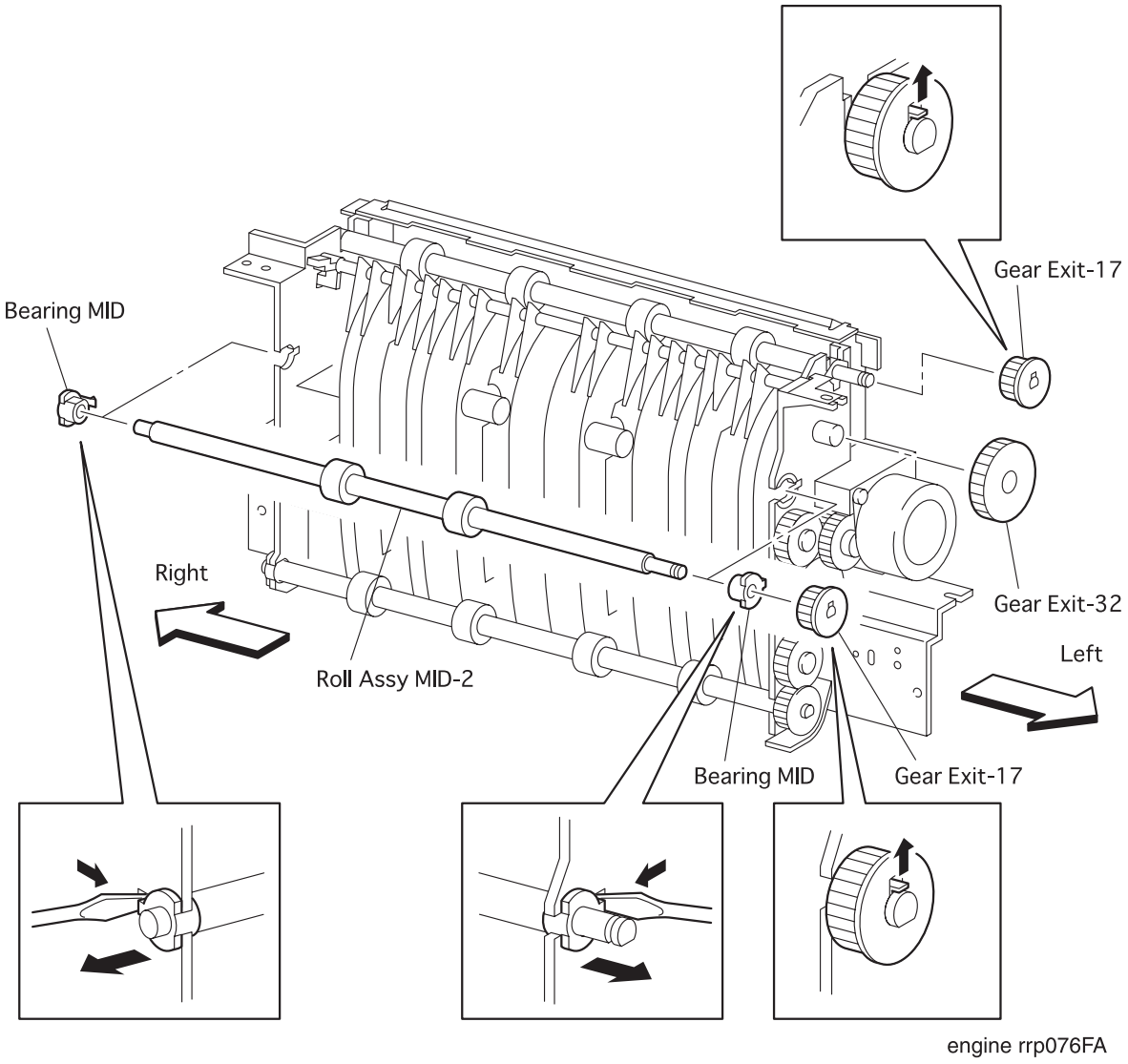

Figure 81. Bearing MID and Roll Assy MID-2 Removal

RRP 7.1.4 Bearing MID (PL7.1.25) and Roll Assy MID-2(PL7.1.11) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Plate Assy left* (RRP 9.1.1).
8. Remove the *Cover Interlock* (RRP 9.1.18).
9. Remove the *Eliminator Assy Exit* (RRP 7.1.1)
10. Remove the *Chute Assy Exit* (RRP 7.1.8).
11. Unhook the *Gear Exit-17* (PL7.1.5) secured to the upper *Roll Assy MID-1* (PL7.1.7) from the *Chute Assy Exit*.
12. Draw the *Gear Exit-17* from the upper *Roll Assy MID-1*.
13. Unhook the *Gear Exit-17* secured to the *Roll Assy MID-2* from the *Chute Assy Exit*.
14. Draw the *Gear Exit-17* from the *Roll Assy MID-2*.
15. Remove the *Gear Exit-32* (PL7.1.23) from the *Chute Assy Exit*.
16. Unhook the *Bearing MID* that secures the left and right shafts of *Roll Assy MID-2* from the *Chute Assy Exit*.
17. Remove the *Roll Assy MID-2* together with the left and right *Bearing MIDs* on the *Roll Assy MID-2* from the *Chute Assy Exit*.
18. Draw the left and right *Bearing MIDs* from the *Roll Assy MID-2*.

RRP 7.1.4 Bearing MID (PL7.1.25) and Roll Assy MID-2(PL7.1.11) continued

Replacement

1. Insert the *Bearing MID* into the left and right shafts of *Roll Assy MID-2*.
2. Mount the *Roll Assy MID-2* together with the left and right *Bearing MIDs* on the *Roll Assy MID-2* to the *Chute Assy Exit*.
3. Secure the left and right shafts of *Roll Assy MID-2* to the *Chute Assy Exit* with the hook of *Bearing MID*.
4. Aligning the position exactly, insert the *Gear Exit-32* (PL7.1.23) into the *Chute Assy Exit*.
5. Insert the *Gear Exit-17* (PL7.1.5) into the shaft of *Roll Assy MID-2* from the *Chute Assy Exit*.
6. Hook the *Gear Exit-17* to the shaft of *Roll Assy MID-2*.
7. Insert the *Gear Exit-17* into the shaft of upper *Roll Assy MID-1* (PL7.1.7) from the *Chute Assy Exit*.
8. Hook the *Gear Exit-17* to the shaft of upper *Roll Assy MID-1*.
9. Mount the *Chute Assy Exit* (RRP 7.1.8).
10. Mount the *Eliminator Assy Exit* (RRP 7.1.1).
11. Mount the *Cover Interlock* (RRP 9.1.18).
12. Mount the *Plate Assy left* (RRP 9.1.1).
13. Mount the *Cover Assy Top* (RRP 1.1.4).
14. Mount the *Cover Left* (RRP 1.1.1).
15. Mount the *Cover Assy I/F* (RRP 1.1.2).
16. Mount the *Cover Assy Rear* (RRP 1.2.3).
17. Mount the *Cover Front L/H* (RRP 1.1.10).
18. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 7.1.4 Bearing Exit (PL7.1.6) and Roll Assy MID-2(PL7.1.11) continued

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RRP 7.1.5 Sensor Photo:Exit (PL7.1.16)

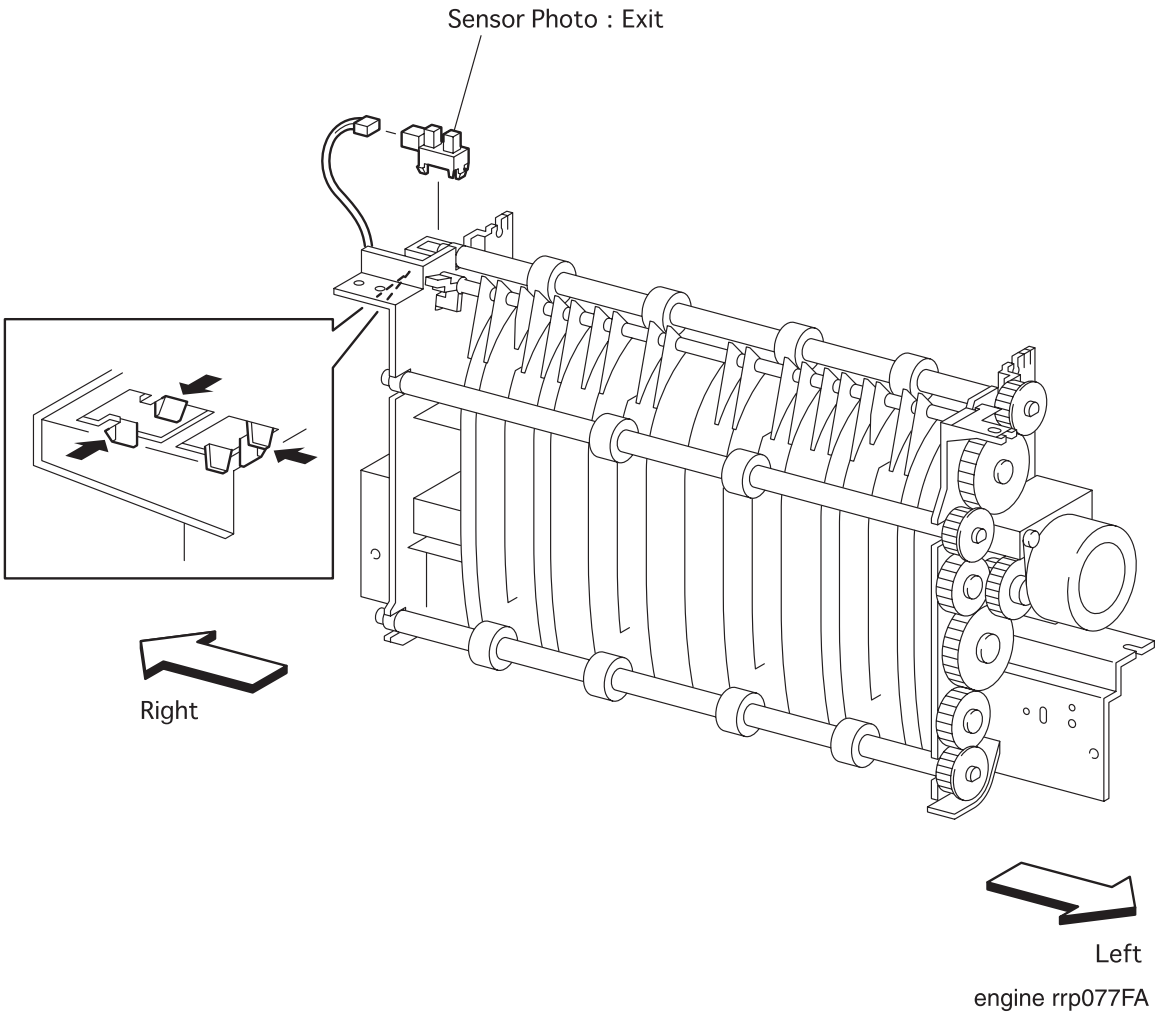

Figure 82. Sensor Photo:Exit Removal

RRP 7.1.5 Sensor Photo:Exit (PL7.1.16) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy Top* (RRP 1.1.4).
5. Remove the *Eliminator Assy Exit* (RRP 7.1.1).
6. Remove the *Actuator Full Stack* (RRP 7.1.2).
7. Unplug the connector (P/J311) on the *Sensor Photo:Exit*.
8. Disengage five hooks of *Sensor Photo:Exit* secured to the *Chute Assy Exit* in the printer.
9. Remove the *Sensor Photo:Exit* from the *Chute Assy Exit*.

Replacement

1. Aligning the position exactly, mount the *Sensor Photo:Exit* on the *Chute Assy Exit* in the printer.
2. Secure the *Sensor Photo:Exit* to the *Chute Assy Exit* with five hooks.
3. Plug the connector (P/J311) to the *Sensor Photo:Exit*.
4. Mount the *Actuator Full Stack* (RRp 7.1.2)
5. Mount the *Eliminator Assy Exit* (RRP 7.1.1).
6. Mount the *Cover Assy Top* (RRP 1.1.4).
7. Mount the *Cover Assy Rear*(RRP 1.2.3).
8. Mount the *Cover Front L/H* (RRP 1.1.10).
9. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 7.1.6 Cover Interlock (PL7.1.18)

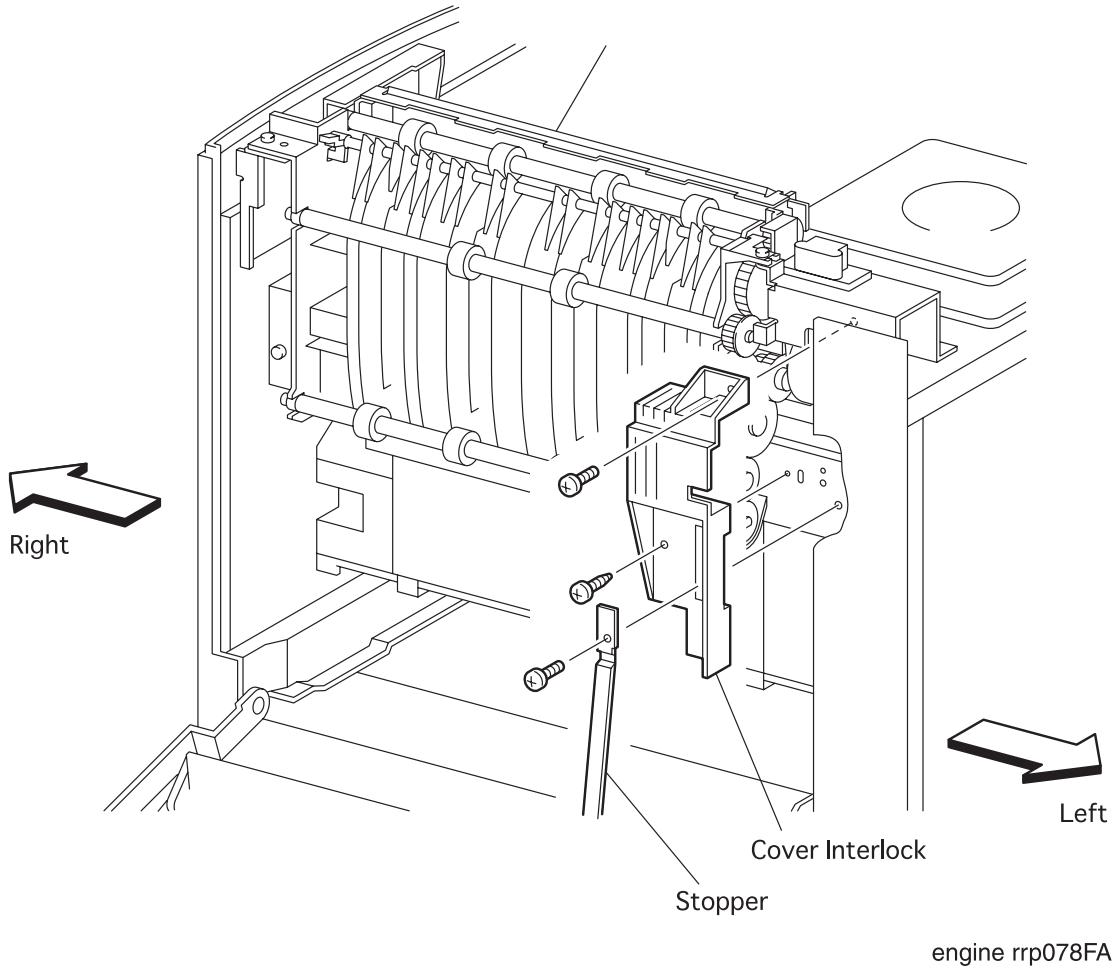

Figure 83. Cover Interlock Removal

RRP 7.1.6 Cover Interlock (PL7.1.18) continued

Removal

1. Remove the *Cover Assy rear* (RRP 1.2.3).
2. Remove the one screw securing the *Stopper* (PL1.2.10) together with *Cover Interlock* to the printer.
3. Remove the two screws securing the *Cover interlock* to the printer.
4. Remove the *Cover interlock* from the printer.

Replacement

1. Align the *Cover interlock* with it mount position to the printer.
2. Secure the *Cover interlock* to the printer with two screws.
3. Secure the *Stopper* (PL1.2.10) together with *Cover Interlock* with one screw.
4. Mount the *Cover Assy Rear* (RRP 1.2.3).

RRP 7.1.7 Motor Assy Exit (PL7.1.21)

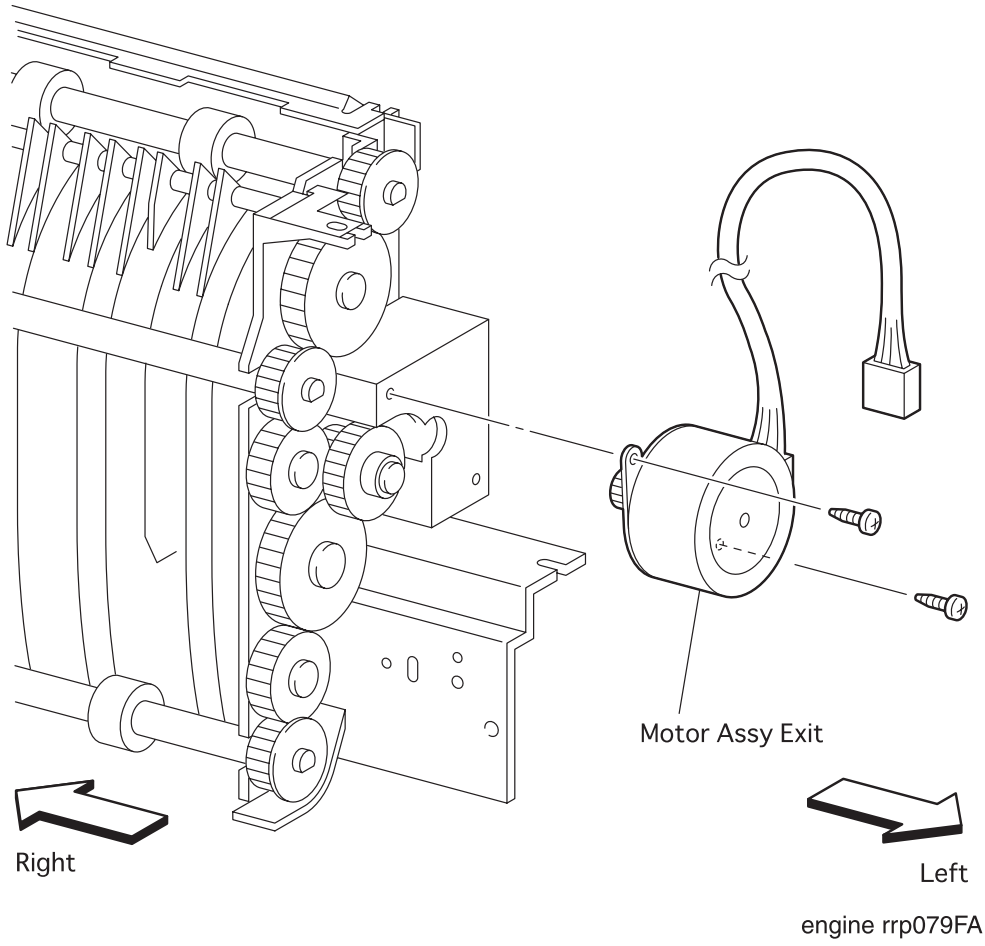

Figure 84. Motor Assy Exit Removal

RRP 7.1.7 Motor Assy Exit (PL7.1.21) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Plate Assy left* (RRP 9.1.1).
8. Remove the *Cover Interlock* (RRP 9.1.18).
9. Remove the *Chute Assy Exit* (RRP 7.1.8).
10. Remove the two screw securing the *Motor Assy Exit* to the *Chute Assy Exit*.
11. Remove the *Motor Assy Exit* from the *Chute Assy Exit*.

Replacement

1. Align the *Motor Assy Exit* with it mount position to the *Chute Assy Exit*.
2. Secure the *Motor Assy Exit* to the *Chute Assy Exit* with two screws.
3. Mount the *Chute Assy Exit* (RRP 7.1.8).
4. Mount the *Cover Interlock* (RRP 9.1.18).
5. Mount the *Plate Assy left* (RRP 9.1.1).
6. Mount the *Cover Assy Top* (RRP 1.1.4).
7. Mount the *Cover Left* (RRP 1.1.1).
8. Mount the *Cover Assy I/F* (RRP 1.1.2).
9. Mount the *Cover Assy Rear* (RRP 1.2.3).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 7.1.8 Chute Assy Exit (with 1-17,19-24)(Reference Only)

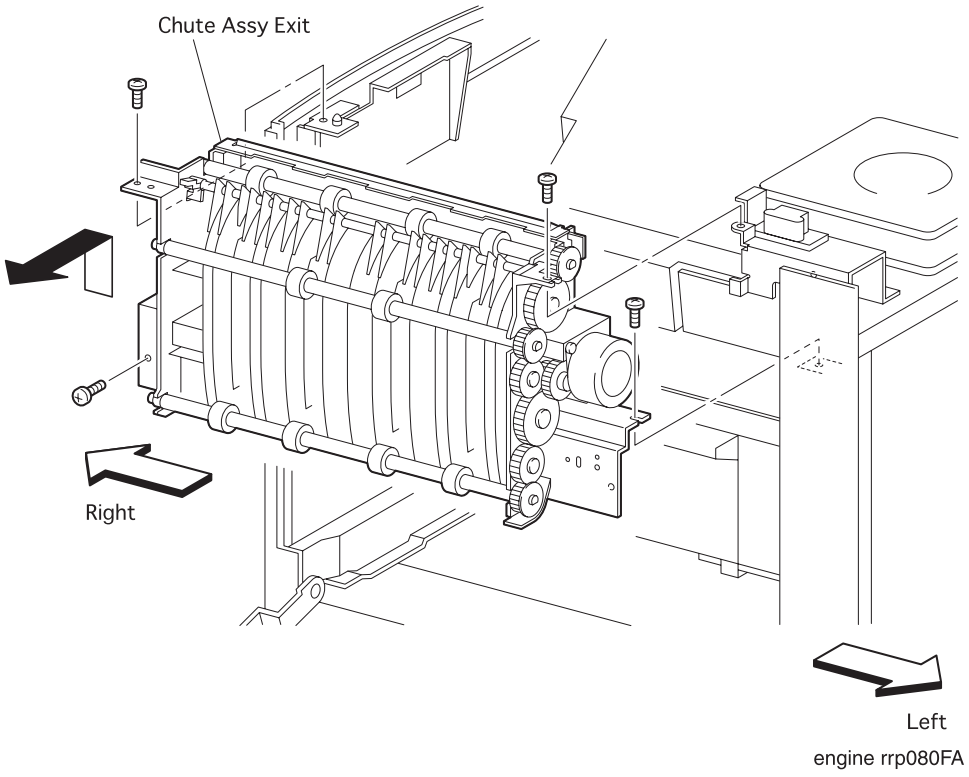

Figure 85. Chute Assy Exit Removal(1)

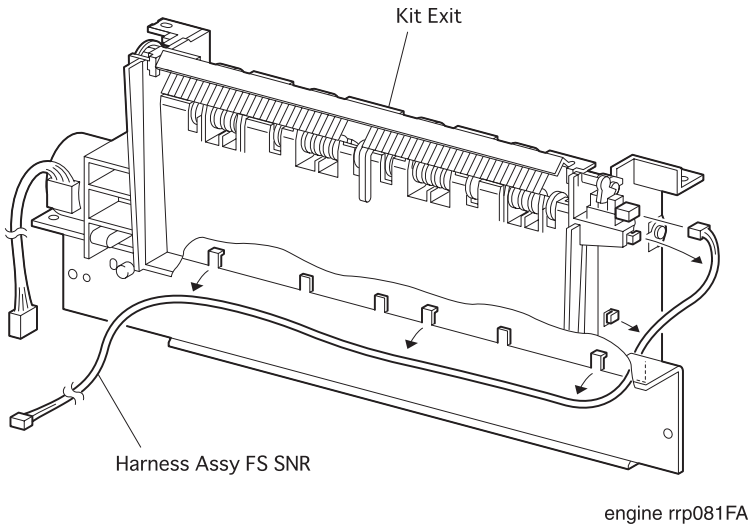

Figure 86. Chute Assy Exit Removal(2)

RRP 7.1.8 Chute Assy Exit(with 1-17,19-24)(Reference Only) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Plate Assy left* (RRP 9.1.1).
8. Remove the *Cover Interlock* (RRP 9.1.18).
9. Unplug the connctor (P/J31) from the *PWBA HKB26 MCU* (PL10.1.13).
10. Unplug the connctor (P/J32) from the *PWBA HKB26 MCU*.
11. Remove the three screw securing the *Chute Assy Exit* to the printer.
12. Remove the *Chute Assy Exit* from the printer.

Replacement

1. Align the *Chute Assy Exit* with it mount position to the printer.
2. Secure the *Chute Assy Exit* to the printer with three screws.
3. Plug the connector (P/J32) to the *PWBA HKB26 MCU* (PL 10.1.13).
4. Plug the connector (P/J31) to the *PWBA HKB26 MCU*.
5. Mount the *Cover Interlock* (RRP 9.1.18).
6. Mount the *Plate Assy left* (RRP 9.1.1).
7. Mount the *Cover Assy Top* (RRP 1.1.4).
8. Mount the *Cover Left* (RRP 1.1.1).
9. Mount the *Cover Assy I/F* (RRP 1.1.2).
10. Mount the *Cover Assy Rear* (RRP 1.2.3).
11. Mount the *Cover Front L/H* (RRP 1.1.10).
12. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 8.1.1 CRU Top Guide Assy (PL8.1.4)

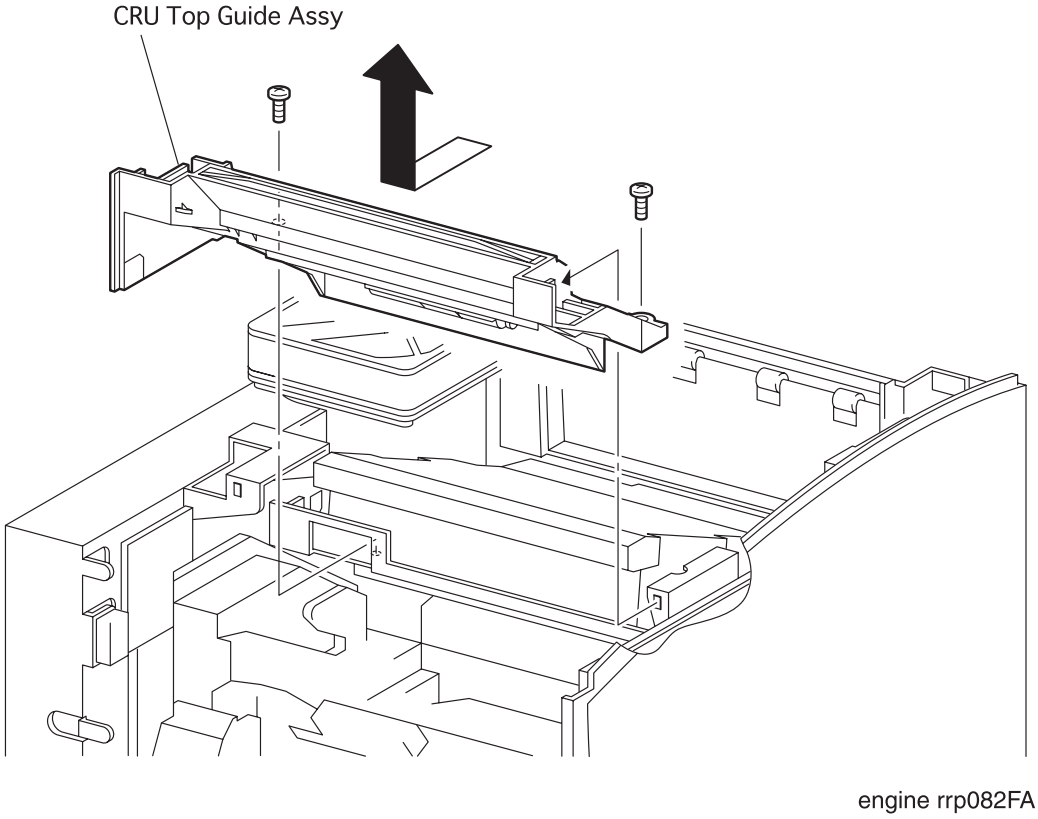

Figure 87. CRU Top Guide Assy Removal

RRP 8.1.1 CRU Top Guide Assy (PL9.1.1) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Plate Assy left* (RRP 9.1.1).
8. Unplug the connector (P/J25) from the *PWBA HKB26 MCU* (PL 10.1.13).
9. Remove the two screw securing the *CRU Top Guide Assy* to the printer.
10. Remove the *CRU Top Guide Assy* together with *Sensor Assy CRU* (PL8.1.6) from the printer.
11. Remove the *Sensor Assy CRU* (RRP 8.1.5).

Replacement

1. Mount the *Sensor Assy CRU* (RRP 8.1.5).
2. Plug the connector (P/J25) to the *PWBA HKB26 MCU* (PL 10.1.13).
3. Align the *CRU Top Guide Assy* with its mount position together with *Sensor Assy CRU* (PL8.1.6) to the printer.
4. Secure the *CRU Top Guide Assy* to the printer with two screws.
5. Mount the *Plate Assy left* (RRP 9.1.1).
6. Mount the *Cover Assy Top* (RRP 1.1.4).
7. Mount the *Cover Left* (RRP 1.1.1).
8. Mount the *Cover Assy I/F* (RRP 1.1.2).
9. Mount the *Cover Assy Rear* (RRP 1.2.3).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 8.1.2 ROS Assy (PL8.1.9)

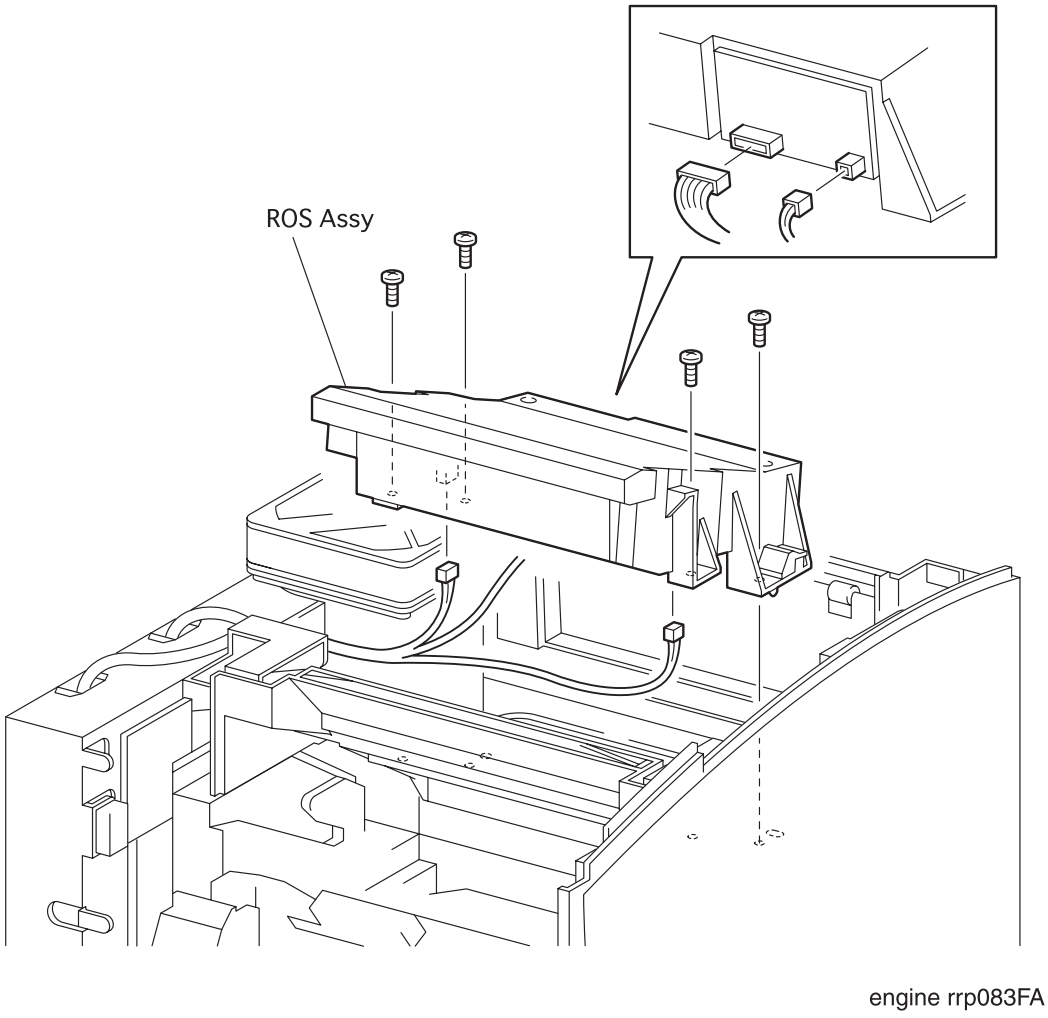

Figure 88. ROS Assy Removal

RRP 8.1.2 ROS Assy (PL8.1.9) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy Top* (RRP 1.1.4).
5. Unplug the connector (P/J212) from the *ROS Assy*.
6. Unplug the connector (P/J213) from the *ROS Assy*.
7. Unplug the connector (P/J223) from the *ROS Assy*.
8. Remove the four screws securing the *ROS Assy* to the printer.
9. Raising the *ROS Assy* a little, unplug the connector (P/J211) on the back side.
10. Remove the *ROS Assy* from the printer.

Replacement

1. Plug the connector (P/J211) on the back side of *ROS Assy*.
2. Plug the connector (P/J223) in the *ROS Assy*.
3. Plug the connector (P/J213) in the *ROS Assy*.
4. Plug the connector (P/J212) in the *ROS Assy*.
5. Align the *ROS Assy* with it mount position to the printer.
6. Secure the *ROSS Assy* to the printer with four screws.
7. Mount the *Cover Assy Top* (RRP 1.1.4).
8. Mount the *Cover Assy Rear* (RRP 1.2.3).
9. Mount the *Cover Front L/H* (RRP 1.1.10).
10. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 8.1.3 Gear Assy Drive (PL8.1.13)

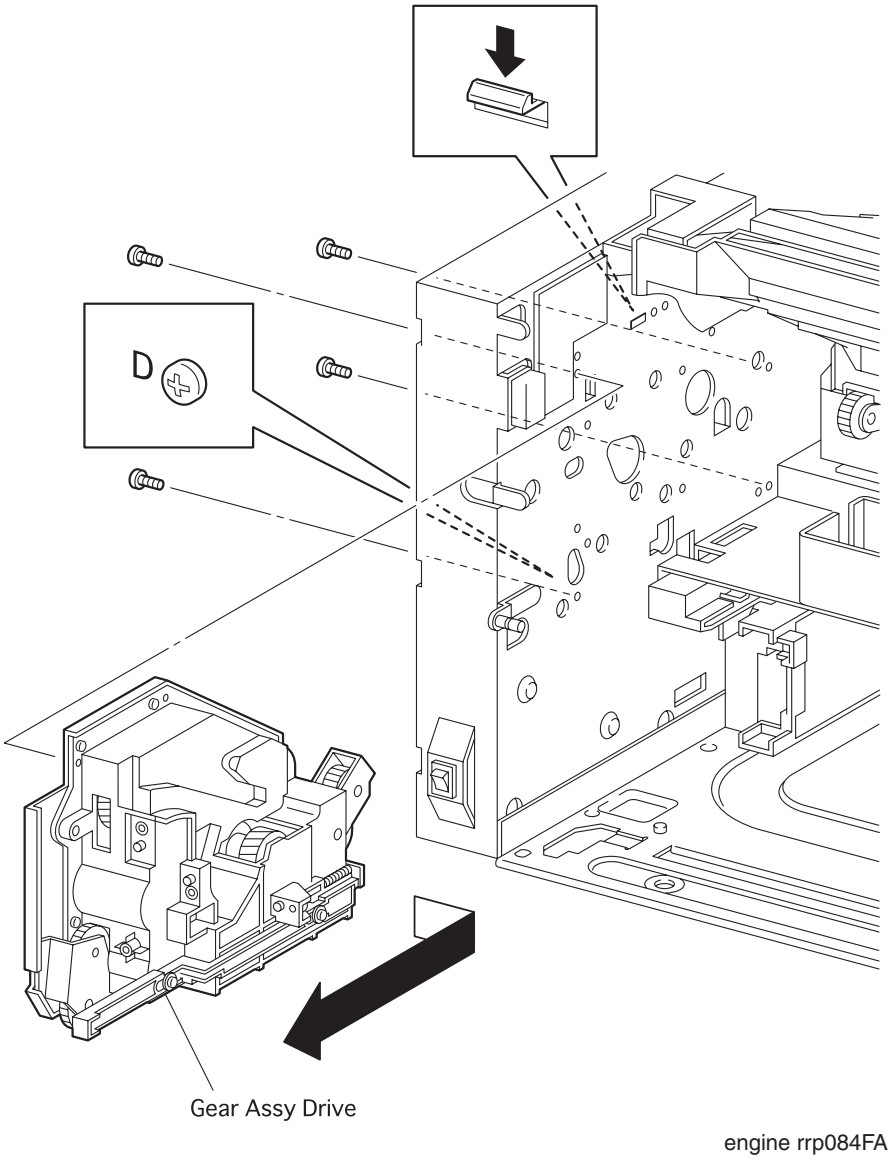

Figure 89. Gear Assy Drive Removal

RRP 8.1.3 Gear Assy Drive (PL8.1.13) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Fuser Assy* (RRP 6.1.3).
5. Remove the *Cover Assy I/F* (RRP 1.1.2).
6. Remove the *Cover Left* (RRP 1.1.1).
7. Remove the *Cover Assy Top* (RRP 1.1.4).
8. Remove the *Cover Right* (RRP 1.1.7).
9. Remove the *Chute MBF Assy* (RRP 4.1.1).
10. Remove the *Shaft 14* (RRP 5.1.10).
11. Remove the *Gear 14* (RRP 5.1.10).
12. Remove the *P/H Assy* (RRP 5.1.1).
13. Remove the *Chute Trans Assy* (RRP 6.1.2).
14. Remove the *Plate Assy Left* (RRP 9.1.1).
15. Remove the *CRU Top Guide Assy* (RRP 8.1.1)
16. Remove the *Plate Handle* (RRP 9.1.3).
17. Remove the *PWBA HKB26 MCU* (RRP 10.1.7).
18. Remove the *Motor Assy Main* (RRP 8.1.4)
19. Remove the *PWBA HKB PS* (RRP 10.1.9).
20. Remove the *Feeder* (RRP 3.1.10).
21. Remove the four screws securing the *Gear Assy Drive* to the printer.
22. Remove the *Gear Assy Drive* from the printer.

RRP 8.1.3 Gear Assy Drive (PL8.1.13) continued

Replacement

NOTE

Take care not to tangle the harness near the *Gear Assy Drive* mounting position when mounting the *Gear Assy Drive*.

NOTE

"D" is scribed around four holes in the printer where the *Gear Assy Drive* is mounted.

1. Align the *Gear Assy Drive* with its mount position to the printer.
2. Secure the *Gear Assy Drive* to the printer with four screws.
3. Mount the *Feeder* (RRP 3.1.10).
4. Mount the *PWBA HKB PS* (RRP 10.1.9).
5. Mount the *Motor Assy Main* (RRP 8.1.4)
6. Mount the *PWBA HKB26 MCU* (RRP 10.1.7).
7. Mount the *Plate Handle* (RRP 9.1.3).
8. Mount the *CRU Top Guide Assy* (RRP 8.1.1)
9. Mount the *Plate Assy Left* (RRP 9.1.1).
10. Mount the *Chute Trans Assy* (RRP 6.1.2).
11. Mount the *P/H Assy* (RRP 5.1.1).
12. Mount the *Gear 14* (RRP 5.1.10).
13. Mount the *Shaft 14* (RRP 5.1.10).
14. Mount the *Chute MBF Assy* (RRP 4.1.1).
15. Mount the *Cover Right* (RRP 1.1.7)
16. Mount the *Cover Assy Top* (RRP 1.1.4).
17. Mount the *Cover Left* (RRP 1.1.1).
18. Mount the *Cover Assy I/F* (RRP 1.1.2).
19. Mount the *Fuser Assy* (RRP 6.1.3).
20. Mount the *Cover Assy Rear* (RRP 1.2.3).
21. Mount the *Cover Front L/H* (RRP 1.1.10).
22. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 8.1.3 Gear Assy Drive (PL8.1.13) continued

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RRP 8.1.4 Motor Assy Main (PL8.1.14)

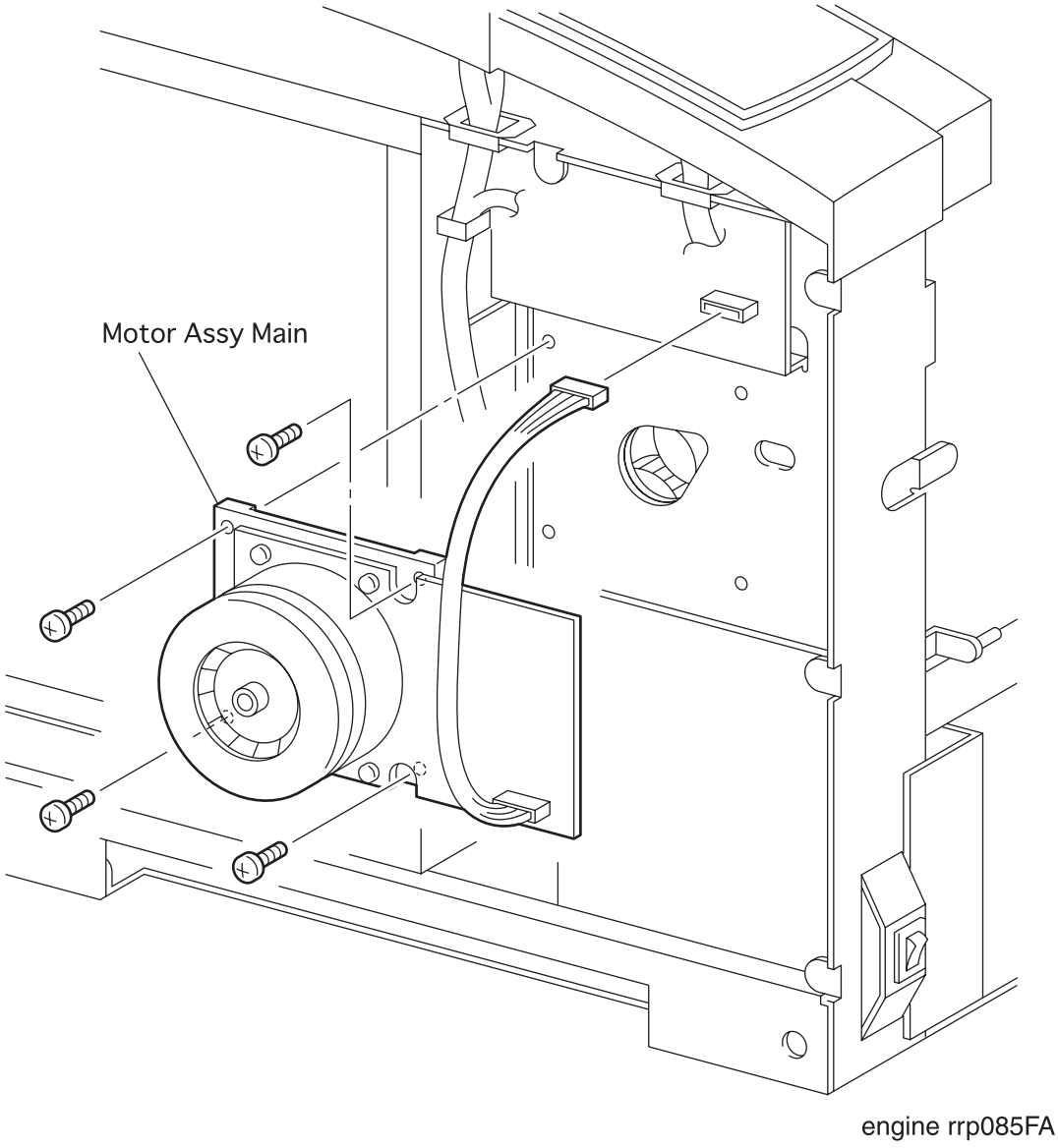

Figure 90. Motor Assy Main Removal

RRP 8.1.4 Motor Assy Main (PL8.1.14) continued

Removal

1. Remove the *Cover Assy I/F* (RRP 1.1.2).
2. Remove the *Cover Left* (RRP 1.1.1).
3. Remove the *Plate Assy Left* (RRP 9.1.1).
4. Unplug the connector (P/J29) from the *PWBA HKB26 MCU* (PL10.1.13).

NOTE

In the following steps, take care not to drop and damage the *Motor Assy Main*.

5. Remove the four screws securing the *Motor Assy Main* to the printer.
6. Remove the *Motor Assy Main* from the printer.

Replacement

NOTE

In the following steps, take care not to drop and damage the *Motor Assy Main*.

1. Align the *Motor Assy Main* with it mount position to the printer.
2. Secure the *Motor Assy Main* to the printer with four screws.
3. Plug the connector (P/J29) in the *PWBA HKB26 MCU* (PL10.1.13).
4. Mount the *Plate Assy Left* (RRP 9.1.1).
5. Mount the *Cover Left* (RRP 1.1.1).
6. Mount the *Cover Assy I/F* (RRP 1.1.2).

RRP 8.1.5 Sensor Assy CRU(with2,5,6) (Reference Only)

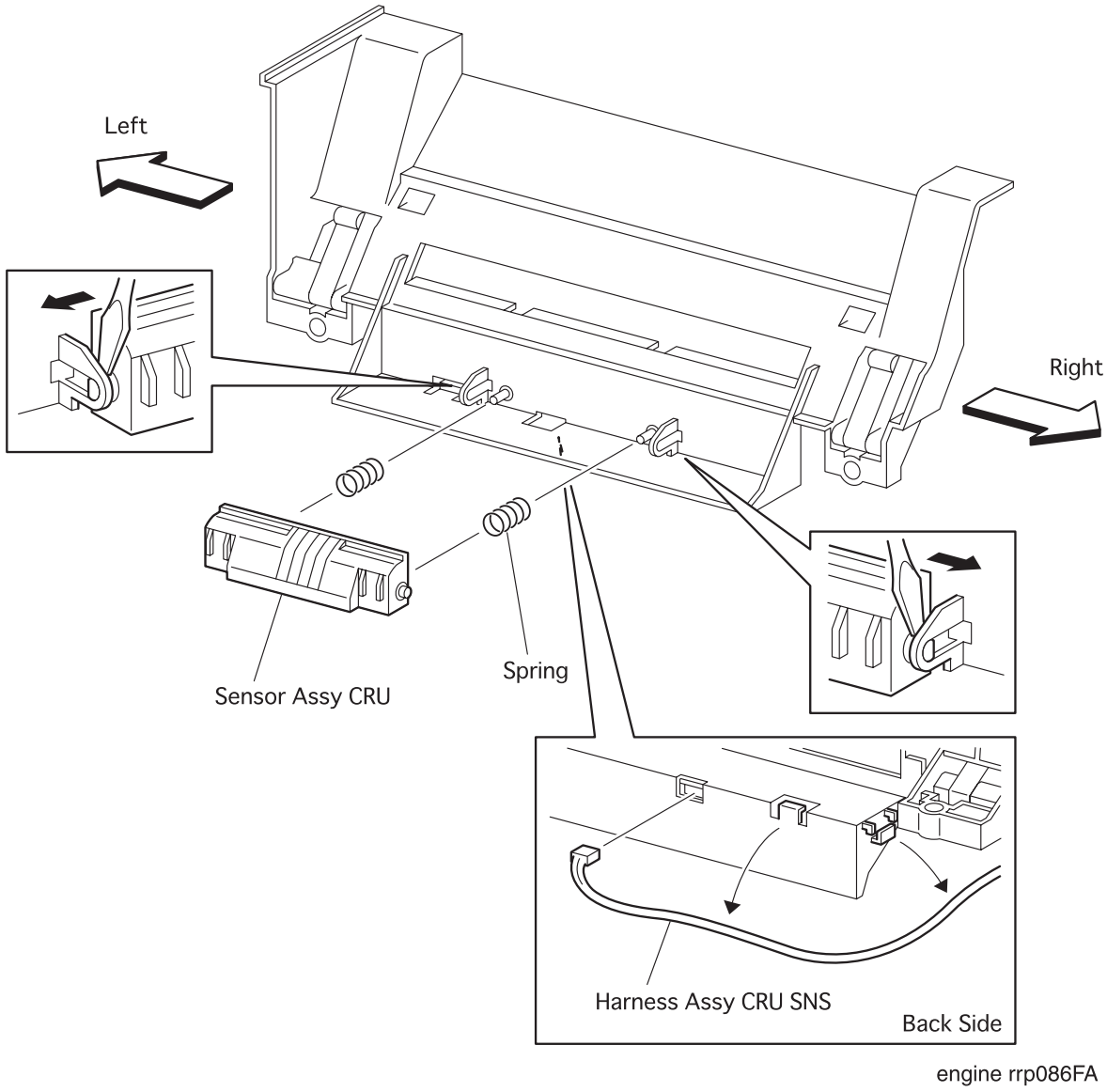

Figure 91. Sensor Assy CRU Removal

RRP 8.1.5 Sensor Assy CRU(with2,5,6) (Reference Only) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Plate Assy Left* (RRP 9.1.1).
8. Remove the *CRU Top Guide Assy* (RRP 8.1.1)
9. Release the harness of *Sensor Assy CRU* from three clamps of *CRU Top Guide Assy* (PL8.1.4).
10. Deflecting the right bracket of *CRU Top Guide Assy* with a small screwdriver, draw off the right shaft of *Sensor Assy CRU*.
11. Draw the left shaft of *Sensor Assy CRU* from the hole in the left bracket of *CRU Top Guide Assy*.

Replacement

1. Insert the left shaft of *Sensor Assy CRU* into a hole in the left bracket of *CRU Top Guide Assy* (PL8.1.4).
2. Deflecting the right bracket of *CRU Top Guide Assy* with a small screwdriver, insert the right shaft of *Sensor Assy CRU* into a hole in the right bracket of *CRU Top Guide Assy*.
3. Secure the harness of *Sensor Assy CRU* with three clamps of *CRU Top Guide Assy*.
4. Mount the *CRU Top Guide Assy* (RRP 8.1.1)
5. Mount the *Plate Assy Left* (RRP 9.1.1).
6. Mount the *Cover Assy Top* (RRP 1.1.4).
7. Mount the *Cover Left* (RRP 1.1.1).
8. Mount the *Cover Assy I/F* (RRP 1.1.2).
9. Mount the *Cover Assy Rear* (RRP 1.2.3).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 9.1.1 Plate Assy Left (PL9.1.1)

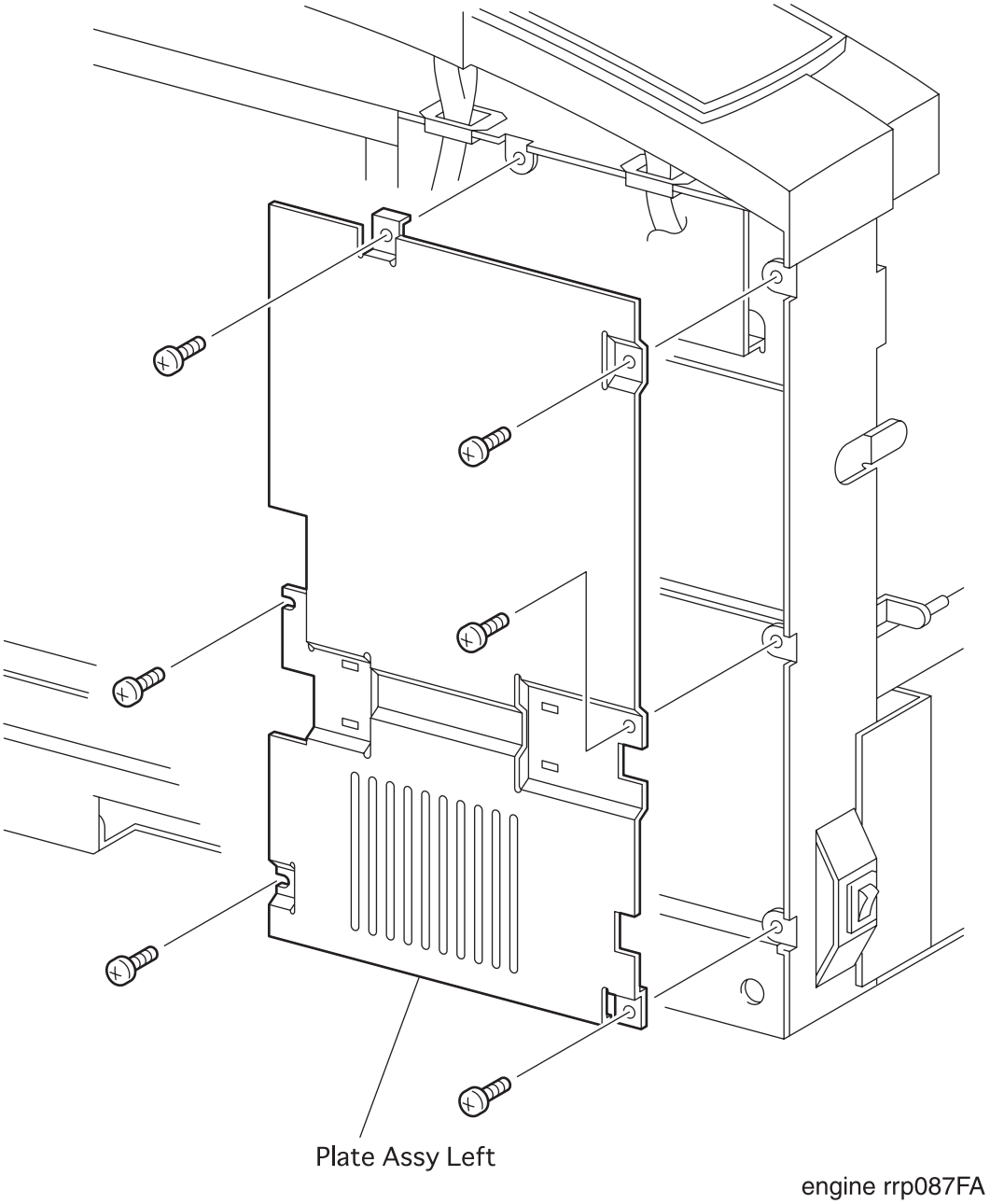

Figure 92. Plate Assy Left Removal

RRP 9.1.1 Plate Assy Left (PL9.1.1) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the six screws securing the *Plate Assy Left* to the printer.
6. Remove the *Plate Assy Left* from the printer.

Replacement

1. Align the *Plate Assy Left* with it mount position to the printer.
2. Secure the *Plate Assy Left* to the printer with six screws.
3. Mount the *Cover Left* (RRP 1.1.1).
4. Mount the *Cover Assy I/F* (RRP 1.1.2).
5. Mount the *Cover Front L/H* (RRP 1.1.10).
6. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 9.1.2 Fan Assy (PL9.1.7)

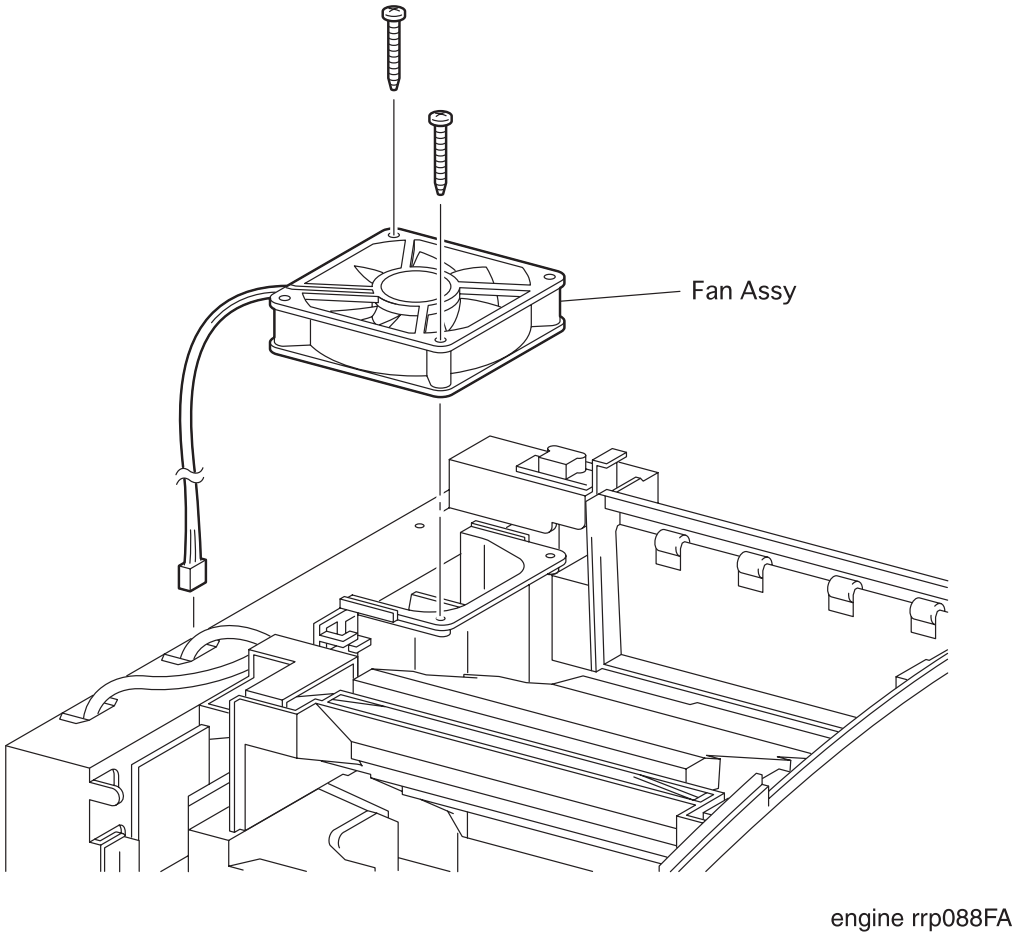

Figure 93. Fan Assy Removal

RRP 9.1.2 Fan Assy (PL9.1.7) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Plate Assy Left* (RRP 9.1.1).
8. Unplug the connector (P/J283) of *Fan Assy* from the *PWBA HKB26 MCU* (PL10.1.13).
9. Release the harness of *Fan Assy* from two clamps from the printer.
10. Remove the two screws securing the *Fan Assy* to the printer.
11. Remove the *Fan Assy* from the printer.

Replacement

1. Align the *Fan Assy* with its mount position to the printer.
2. Secure the *Fan Assy* to the printer with two screws.
3. Plug the connector (P/J283) of *Fan Assy*.
4. Secure the harness of connector (P/J283) to the printer with two clamps.
5. Mount the *Plate Assy Left* (RRP 9.1.1).
6. Mount the *Cover Assy Top* (RRP 1.1.4).
7. Mount the *Cover Left* (RRP 1.1.1).
8. Mount the *Cover Assy I/F* (RRP 1.1.2).
9. Mount the *Cover Assy Rear* (RRP 1.2.3).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 9.1.3 Plate Handle (PL9.1.12)

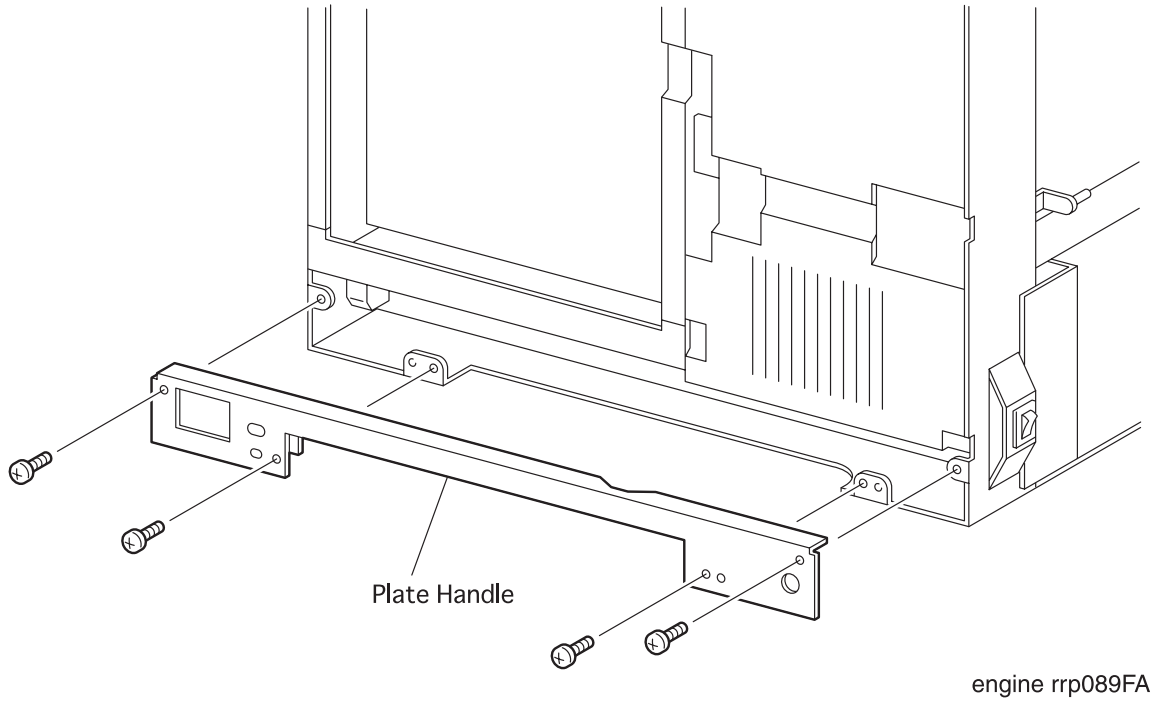

Figure 94. Plate Handle Removal

RRP 9.1.3 Plate Handle (PL9.1.12) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Plate Assy Left* (RRP 9.1.1).
6. Remove the four screws securing the *Plate Handle* to the printer.
7. Remove the *Plate Handle* from the printer.

Replacement

1. Align the *Plate Handle* with it mount position to the printer.
2. Secure the *Plate Handle* to the printer with four screws.
3. Mount the *Plate Assy Left* (RRP 9.1.1).
4. Mount the *Cover Left* (RRP 1.1.1).
5. Mount the *Cover Assy I/F* (RRP 1.1.2).
6. Mount the *Cover Front L/H* (RRP 1.1.10).
7. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 9.1.4 PWBA Size 1 (PL9.1.19)

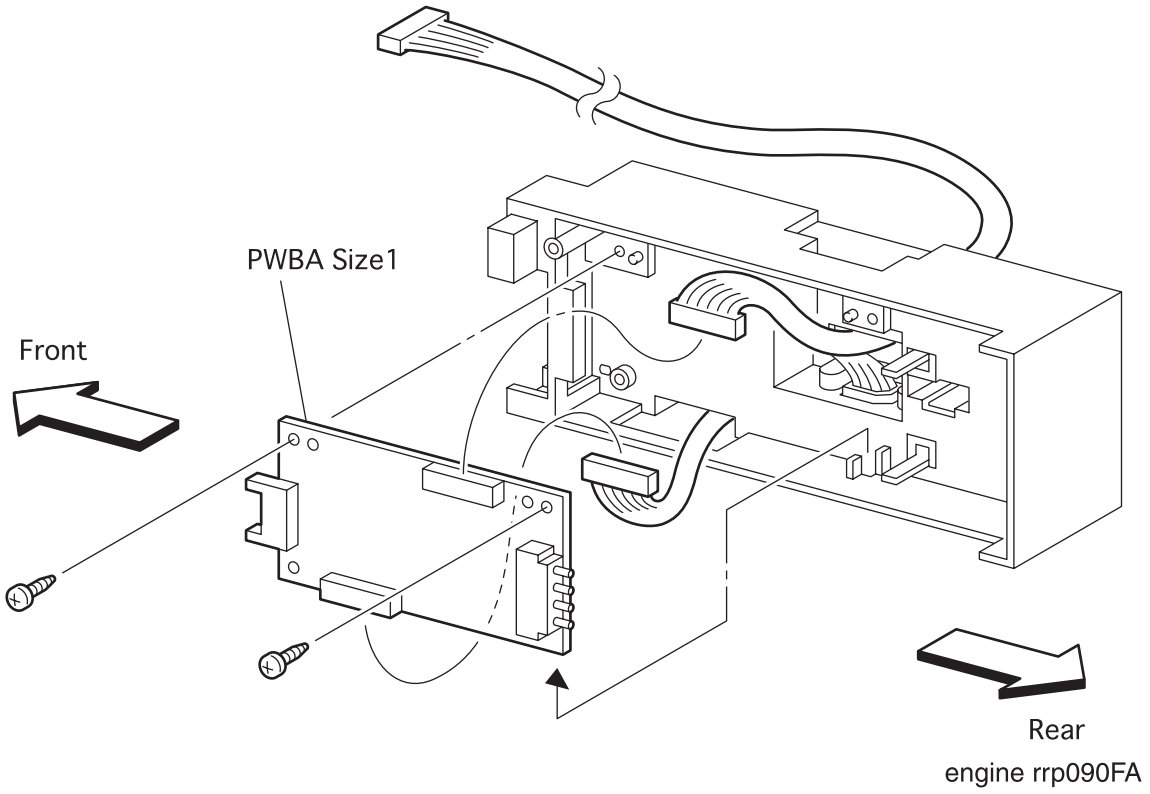

Figure 95. PWBA Size 1 Removal

RRP 9.1.4 PWBA Size 1 (PL9.1.19) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Plate Assy Left* (RRP 9.1.1).
6. Remove the *Plate Handle* (RRP 9.1.3).
7. Remove the *Housing Assy Size Sensor* (RRP 9.1.7).
8. Remove the *Size Sensor Housing* (RRP 9.1.6).
9. Remove the four screws securing the *PWBA Size 1* to the *Housing Size Sensor* (PL9.1.21)

NOTE

In the following steps, do not detach the *Housing Size Sensor* and the *PWBA Size 1* far away because they are connected with the harness.

10. Detach the *PWBA Size 1* a little from the *Housing Size Sensor*.
11. Unplug the connector (P/J331) from the *PWBA Size 1*.
12. Unplug the connector (P/J51) from the *PWBA Size 1*, and remove the *PWBA Size 1*.

Replacement

1. Plug the connector (P/J51) in the *PWBA Size 1*.
2. Plug the connector (P/J331) in the *PWBA Size 1*.
3. Align the *PWBA Size 1* with it mount position to the *Housing Size Sensor* (PL9.1.21).
4. Secure the *PWBA Size 1* to the *Housing Size Sensor* with four screws.
5. Mount the *Size Sensor Housing* (RRP 9.1.6).
6. Mount the *Housing Assy Size Sensor* (PPR 9.1.7).
7. Mount the *Plate Handle* (RRP 9.1.3).
8. Mount the *Plate Assy Left* (RRP 9.1.1).
9. Mount the *Cover Left* (RRP 1.1.1).
10. Mount the *Cover Assy I/F* (RRP 1.1.2).
11. Mount the *Cover Front L/H* (RRP 1.1.10).
12. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 9.1.5 Harness Assy Size M (PL9.1.20)

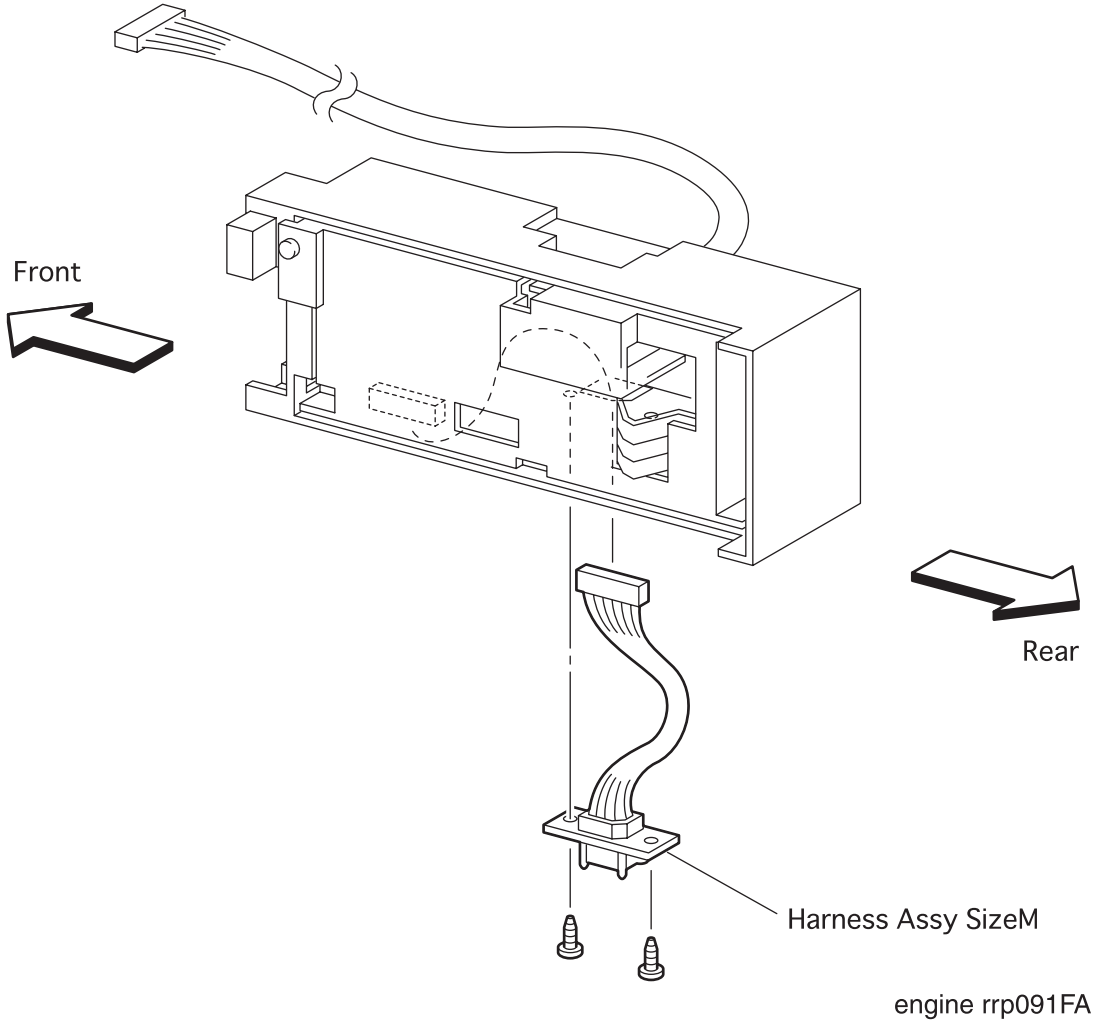

Figure 96. Harness Assy Size M Removal

RRP 9.1.5 Harness Assy Size M (PL9.1.20) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Plate Assy Left* (RRP 9.1.1).
6. Remove the *Plate Handle* (RRP 9.1.3).
7. Remove the *Housing Assy Size Sensor* (RRP 9.1.7).
8. Remove the *Size Sensor Housing* (RRP 9.1.6).
9. Unplug the connector (P/J51) of *Harness Assy Size M* from the *PWBA Size 1* (PL9.1.19).
10. Remove the two screws securing the *Harness Assy Size M* to the *Housing Size Sensor* (PL9.1.21).
11. Draw off the harness of *Harness Assy Size M* from three holes in the *Housing Size Sensor*, and Remove the *Harness Assy Size M*.

Replacement

1. Insert the harness of *Harness Assy Size M* into three holes in the *Housing Size Sensor* (PL9.1.21).
2. Align the *Harness Assy Size M* with its mount position to the *Housing Size Sensor*.
3. Secure the *Harness Assy Size M* to the *Housing Size Sensor* with two screws.
4. Plug the connector (P/J51) of *Harness Assy Size M* to the *PWBA Size 1*.
5. Mount the *Size Sensor Housing* (RRP 9.1.6).
6. Mount the *Housing Assy Size Sensor* (RRP 9.1.7).
7. Mount the *Plate Handle* (RRP 9.1.3).
8. Mount the *Plate Assy Left* (RRP 9.1.1).
9. Mount the *Cover Left* (RRP 1.1.1).
10. Mount the *Cover Assy I/F* (RRP 1.1.2).
11. Mount the *Cover Front L/H* (RRP 1.1.10).
12. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 9.1.6 Size Sensor Housing (with 14-18)(Reference Only)

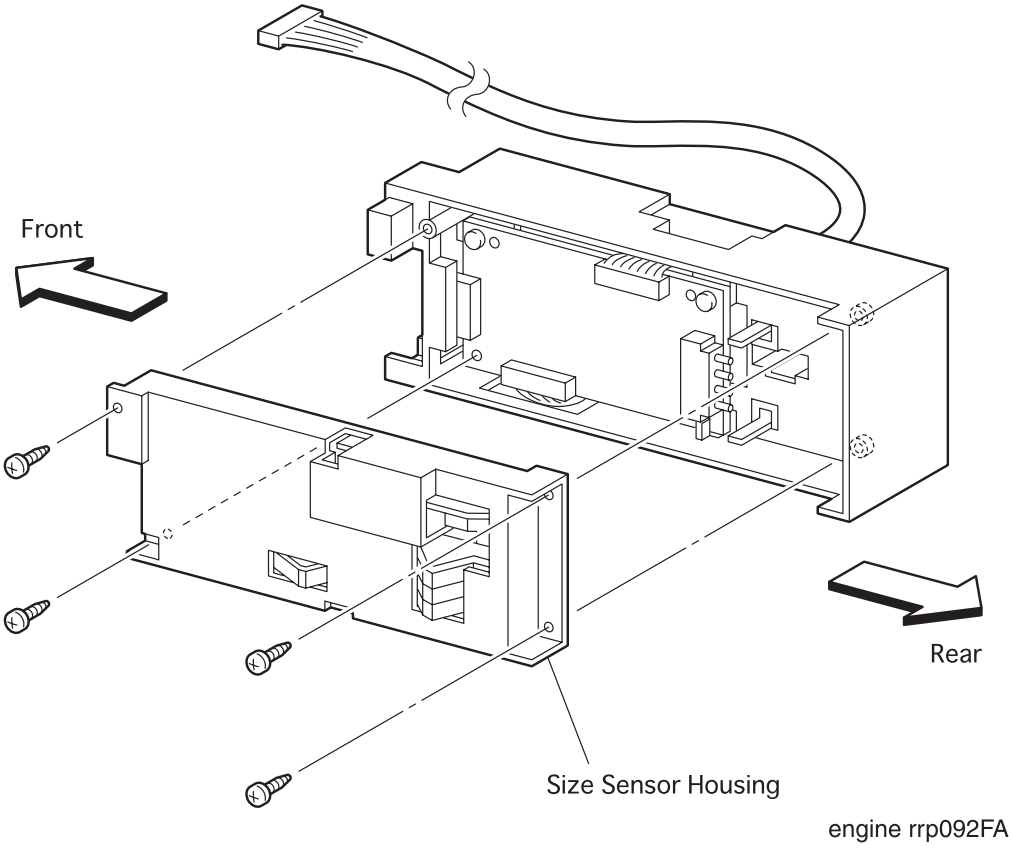

Figure 97. Size Sensor Housing Removal

RRP 9.1.6 Size Sensor Housing(with14-18)(Reference Only)continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Plate Assy Left* (RRP 9.1.1).
6. Remove the *Plate Handle* (RRP 9.1.3).
7. Remove the *Housing Assy Size Sensor* (RRP 9.1.7).
8. Remove four screws securing the *Size Sensor Housing* to the *Housing Assy Size Sensor* (PL9.1.X).
9. Disengage two hooks of *Size Sensor Housing* from the *Housing Assy Size Sensor*.
10. Remove the *Size Sensor Housing* from the *Housing Assy Size Sensor*.

Replacement

1. Disengage the back of *Cam SW* (PL9.1.15) on *Size Sensor Housing* from a square hole, and while holding the back of *Cam SW*, mount the *Size Sensor Housing* on the *Housing Assy Size Sensor* (PL9.1.X).
2. Secure the *Size Sensor Housing* to the *Housing Assy Size Sensor* with two hooks.
3. Secure *Size Sensor Housing* to the *Housing Assy Size Sensor* with four screws.
4. Mount the *Housing Assy Size Sensor* (RRP 9.1.7).
5. Mount the *Plate Handle* (RRP 9.1.3).
6. Mount the *Plate Assy Left* (RRP 9.1.1).
7. Mount the *Cover Left* (RRP 1.1.1).
8. Mount the *Cover Assy I/F* (RRP 1.1.2).
9. Mount the *Cover Front L/H* (RRP 1.1.10).
10. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 9.1.7 Housing Assy Size Sensor (with13-21)(Reference Only)

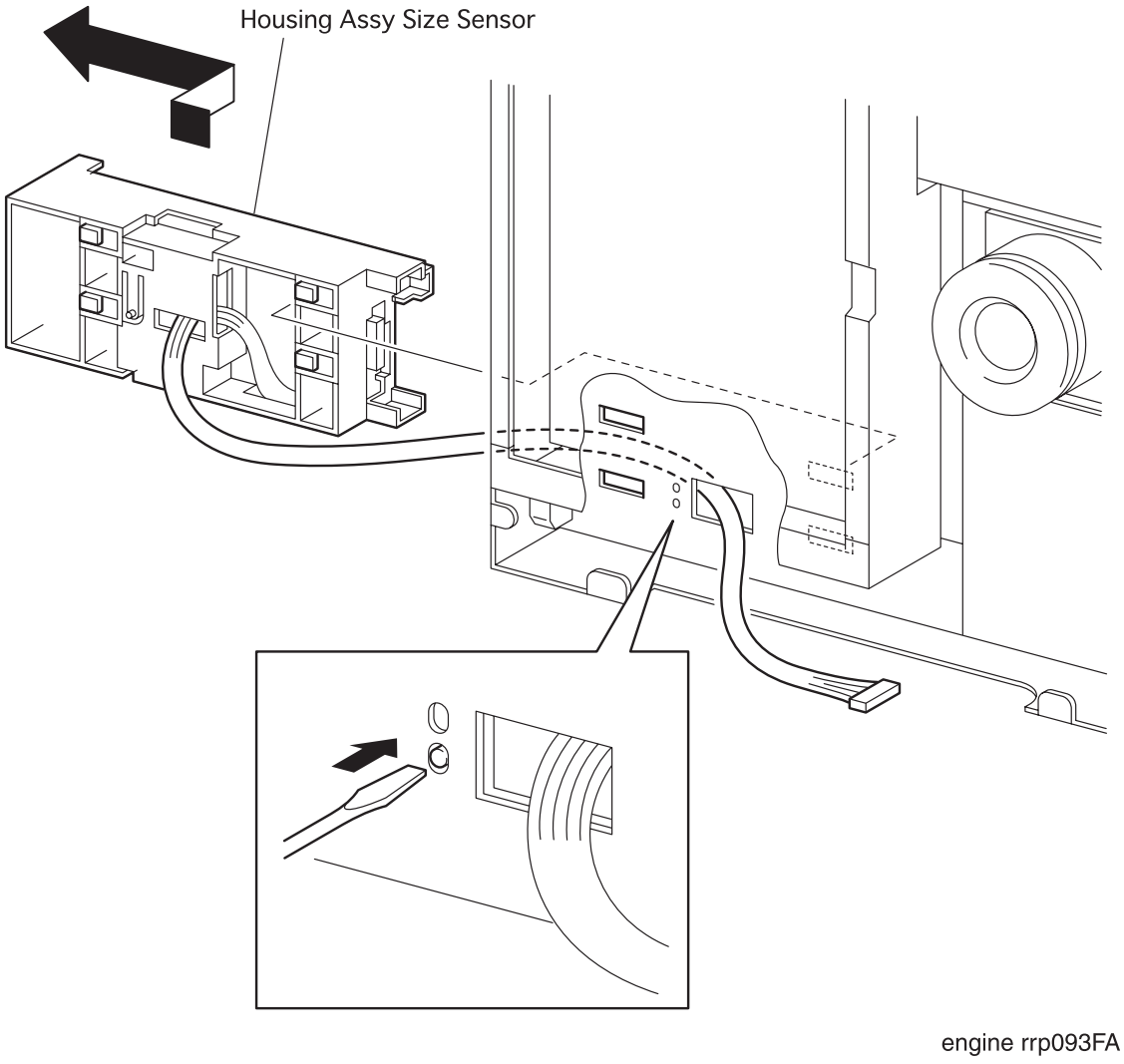

Figure 98. Housing Assy Size Sensor Removal

RRP 9.1.7 Housing Assy Size Sensor (with 13-21)(Reference Only) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Plate Assy Left* (RRP 9.1.1).
6. Remove the *Plate Handle* (RRP 9.1.3).
7. Unplug the connector (P/J33) from the *MCU HKB PWB* (PL10.1.13).
8. Release three clamps on the harness of *Housing Assy Size Sensor* from the printer.

NOTE

In the following steps, do not detach the *Housing Assy Size Sensor* and the printer far away because they are connected with the harness.

9. Pushing a boss that secures the *Housing Assy Size Sensor* to the printer with a small screwdriver, draw off the *Housing Assy Size Sensor* toward the rear.
10. Draw the harness of *Housing Assy Size Sensor* from the hole in the printer.

Replacement

1. Insert the harness of *Housing Assy Size Sensor* into the hole in the printer.
2. Align four hooks of *Housing Assy Size Sensor* with four holes in the printer.
3. Pushing the rear of *Housing Assy Size Sensor*, slide it toward the front and secure four hooks of *Housing Assy Size Sensor* to four holes in the printer.
4. Plug the connector (P/J33) to the *MCU HKB PWB* (PL10.1.13).
5. Secure the harness of *Housing Assy Size Sensor* to the printer with three clamps.
6. Mount the *Plate Handle* (RRP 9.1.3).
7. Mount the *Plate Assy Left* (RRP 9.1.1).
8. Mount the *Cover Left* (RRP 1.1.1).
9. Mount the *Cover Assy I/F* (RRP 1.1.2).
10. Mount the *Cover Front L/H* (RRP 1.1.10).
11. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.1 PWB ESS (PL10.1.2)

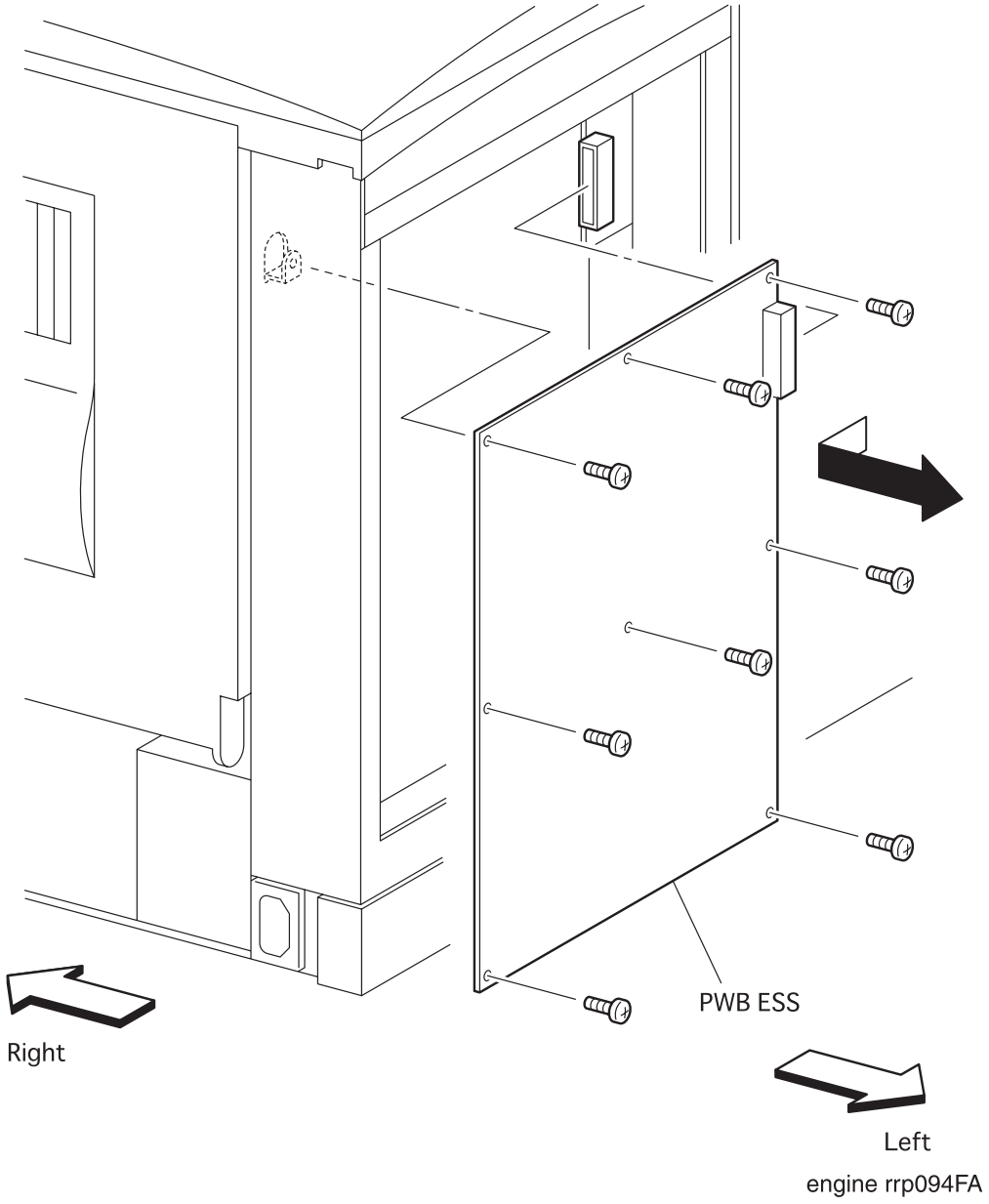

Figure 99. PWB ESS Removal

RRP 10.1.1 PWB ESS (PL10.1.2) continued

Removal

1. Remove the *Cover Assy I/F* (RRP 1.1.2).
2. Unplug the connector from the *PWB ESS*.
3. Unplug the connector from the *PWB ESS*.
4. Remove the eight screws securing the *PWB ESS* to the printer.
5. Shifting the *PWB ESS* toward the rear, unplug the connector from the printer.
6. Remove the *PWB ESS* from the printer.

Replacement

1. Align the *PWB ESS* with its mount position to the printer.
2. Shifting the *PWB ESS* toward the front of printer, plug the connector of *PWB ESS* to the connector of *PWBA HKB26 MCU* (PL10.1.13).
3. Secure the *PWB ESS* to the printer with eight screws.
4. Plug the connector to the *PWB ESS*.
5. Plug the connector to the *PWB ESS*.
6. Mount the *Cover Assy I/F* (RRP 1.1.2).

RRP 10.1.2 Harness Assy OCT-M (PL10.1.4)

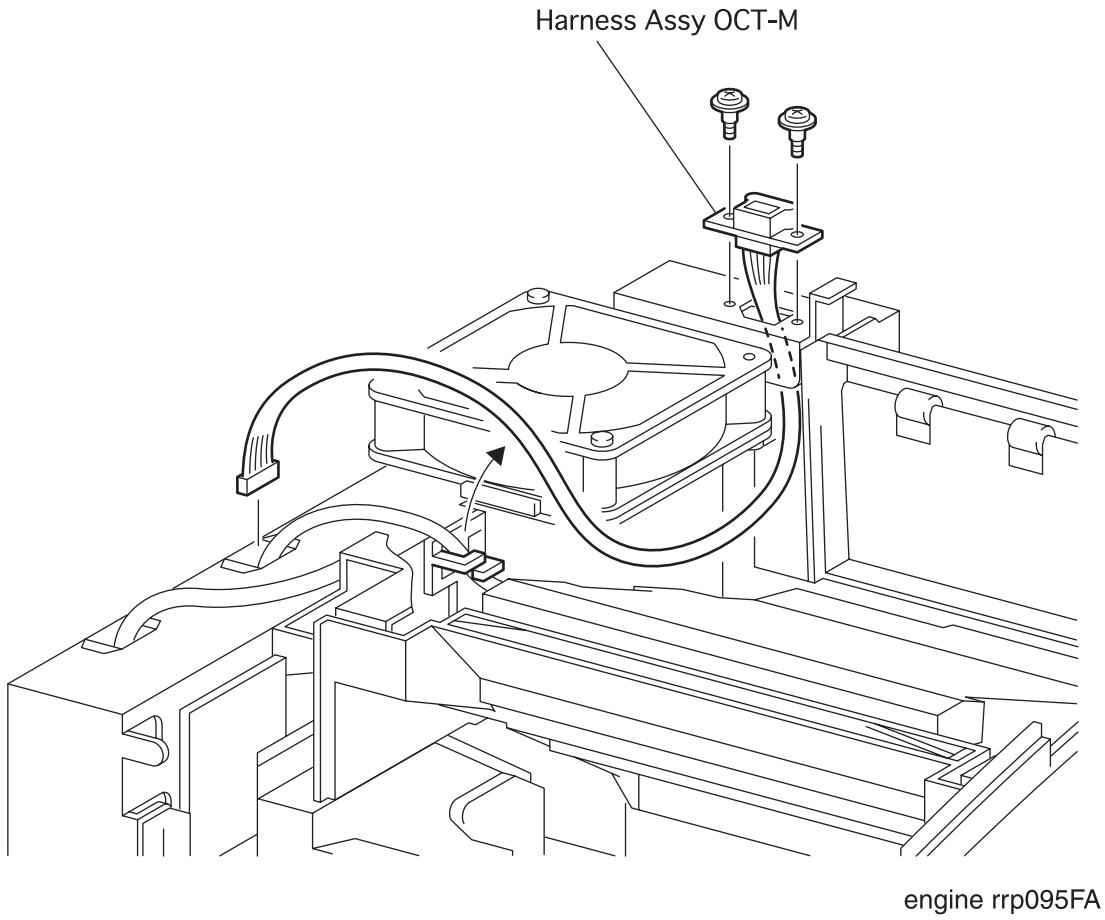

Figure 100. Harness Assy OCT-M Removal

RRP 10.1.2 Harness Assy OCT-M (PL10.1.4) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Plate Assy Left* (RRP 9.1.1).
6. Remove the *Cover Interlock* (RRP 9.1.18).
7. Remove the *Chute Assy Exit* (RRP 7.1.8).
8. Unplug the connector (P/J35) from the *PWBA HKB26 MCU* (PL10.1.13).
9. Unclamp the harness of *Harness Assy OCT-M* from the printer

NOTE

In the following steps, do not detach the *Harness Assy OCT-M* and the printer far away because they are connected with the harness.

10. Remove the two screws securing the *Harness Assy OCT-M* to the printer.
11. Detach the harness of *Harness Assy OCT-M* a little from the printer.
12. Draw the harness of *Harness Assy OCT-M* from the hole in the printer.

Replacement

1. Insert the harness of *Harness Assy OCT-M* into the hole in the printer.
2. Align the *Harness Assy OCT-M* with its mount position to the printer.
3. Secure the *Harness Assy OCT-M* to the printer with two screws.
4. Plug the connector (P/J35) to the *PWBA HKB26 MCU* (PL10.1.13).
5. Clamp the harness of *Harness Assy OCT-M* to the printer.
6. Mount the *Chute Assy Exit* (RRP 7.1.8).
7. Mount the *Cover Interlock* (RRP 9.1.18).
8. Mount the *Plate Assy Left* (RRP 9.1.1).
9. Mount the *Cover Left* (RRP 1.1.1).
10. Mount the *Cover Assy I/F* (RRP 1.1.2).
11. Mount the *Cover Front L/H* (RRP 1.1.10).
12. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.3 Switch Assy I/L Rear (PL10.1.7)

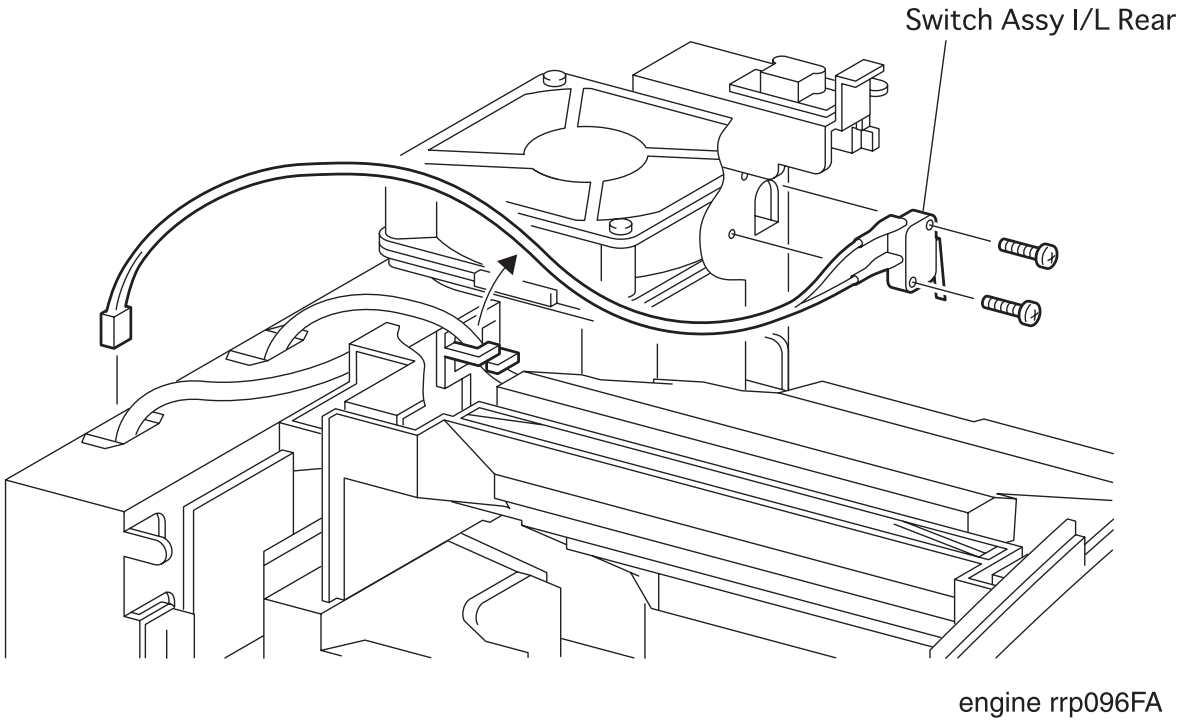

Figure 101. Switch Assy I/L Rear Removal

RRP 10.1.3 Switch Assy I/L Rear (PL10.1.7) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Cover Assy I/F* (RRP 1.1.2).
5. Remove the *Cover Left* (RRP 1.1.1).
6. Remove the *Cover Assy Top* (RRP 1.1.4).
7. Remove the *Plate Assy Left* (RRP 9.1.1).
8. Remove the *Cover Interlock* (RRP 9.1.18).
9. Remove the *Chute Assy Exit* (RRP 7.1.8).
10. Unplug the connector (P/J30) from the *PWBA HKB26 MCU* (PL10.1.13).
11. Unclamp the harness of *Switch Assy I/L Rear* from the printer.

NOTE

In the following steps, do not detach the *Switch Assy I/L Rear* and the printer far away because they are connected with the harness.

12. Remove the two screws securing the *Switch Assy I/L Rear* to the printer.
13. Detach the harness of *Harness Assy OCT-M* a little from the printer.
14. Draw the harness of *Harness Assy OCT-M* from the hole in the printer.

Replacement

1. Insert the harness of *Switch Assy I/L Rear* into the hole in the printer.
2. Align the *Switch Assy I/L Rear* with its mount position to the printer.
3. Secure the *Switch Assy I/L Rear* to the printer with two screws.
4. Plug the connector (P/J30) to the *PWBA HKB26 MCU* (PL10.1.13).
5. Clamp the harness of *Switch Assy I/L Rear* to the printer.
6. Mount the *Chute Assy Exit* (RRP 7.1.8).
7. Mount the *Cover Interlock* (RRP 9.1.18).
8. Mount the *Plate Assy Left* (RRP 9.1.1).
9. Mount the *Cover Assy Top* (RRP 1.1.4).
10. Mount the *Cover Left* (RRP 1.1.1).
11. Mount the *Cover Assy I/F* (RRP 1.1.2).
12. Mount the *Cover Assy Rear* (RRP 1.2.3).
13. Mount the *Cover Front L/H* (RRP 1.1.10).
14. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.4 Harness Assy DUP-M (PL10.1.9)

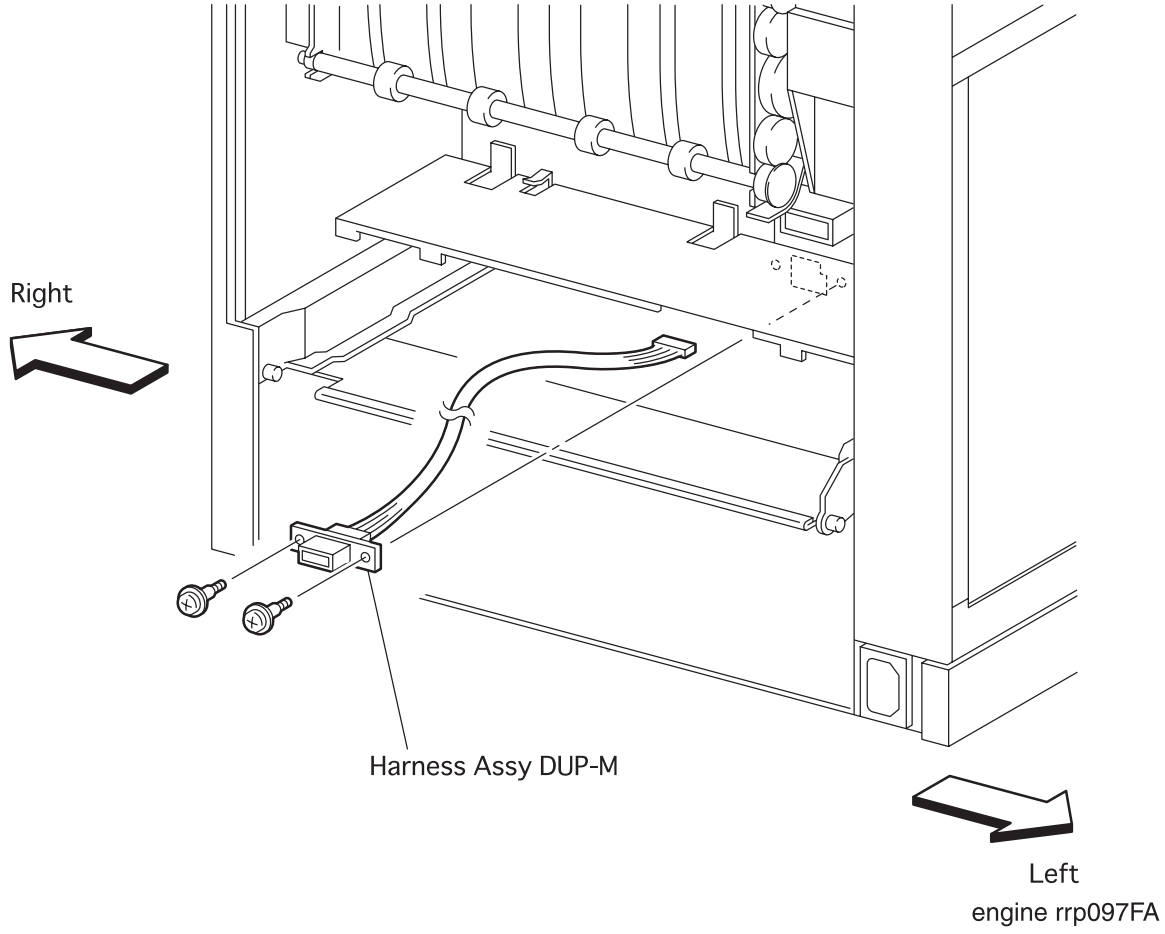

Figure 102. harness Assy DUP-M Removal

RRP 10.1.4 Harness Assy DUP-M (PL10.1.9) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy Rear* (RRP 1.2.3).
4. Remove the *Fuser Assy* (RRP 6.1.3).
5. Remove the *Cover Assy I/F* (RRP 1.1.2).
6. Remove the *Cover Left* (RRP 1.1.1).
7. Remove the *Cover Assy Top* (RRP 1.1.4).
8. Remove the *Chute MBF Assy* (RRP 4.1.1).
9. Remove the *Shaft 14* (RRP 5.1.10).
10. Remove the *Gear 14* (RRP 5.1.10).
11. Remove the *P/H Assy* (RRP 5.1.1).
12. Remove the *Chute Trans Assy* (RRP 6.1.2).
13. Remove the *Plate Assy Left* (RRP 9.1.1).
14. Remove the *CRU Top Guide Assy* (RRP 8.1.1)
15. Remove the *Plate Handle* (RRP 9.1.3).
16. Remove the *PWBA HKB26 MCU* (RRP 10.1.7).
17. Remove the *Motor Assy Main* (RRP 8.1.4)
18. Remove the *PWBA HKB PS* (RRP 10.1.9).
19. Remove the *Gear Assy Drive* (RRP 8.1.3).
20. Unplug the connector (P/J34) from the *PWBA HKB26 MCU* (PL10.1.13).

NOTE

In the following steps, do not detach the *Harness Assy DUP-M* and the printer far away because they are connected with the harness.

21. Remove the two screws securing the *Harness Assy DUP-M* to the printer.
22. Detach the harness of *Harness Assy DUP-M* a little from the printer.
23. Draw the harness of *Harness Assy DUP-M* from the hole in the printer.

RRP 10.1.4 Harness Assy DUP-M (PL10.1.9) continued

Replacement

1. Insert the harness of *Harness Assy DUP-M* into the hole in the printer.
2. Align the *Harness Assy DUP-M* with its mount position to the printer.
3. Secure the *Harness Assy DUP-M* to the printer with two screws.
4. Plug the connector (P/J34) to the *PWBA HKB26 MCU* (PL10.1.13).
5. Mount the *Gear Assy Drive* (RRP 8.1.3).
6. Mount the *PWBA LVES* (RRP 10.1.9).
7. Mount the *Motor Assy Main* (RRP 8.1.4).
8. Mount the *PWBA HKB26 MCU* (RRP 10.1.7).
9. Mount the *Plate Handle* (RRP 9.1.3).
10. Mount the *CRU Top Guide Assy* (RRP 8.1.1)
11. Mount the *Plate Assy Left* (RRP 9.1.1).
12. Mount the *Chute Trans Assy* (RRP 6.1.2).
13. Mount the *P/H Assy* (RRP 5.1.1).
14. Mount the *Gear 14* (RRP 5.1.10).
15. Mount the *Shaft 14* (RRP 5.1.10).
16. Mount the *Chute MBF Assy* (RRP 4.1.1).
17. Mount the *Cover Assy Top* (RRP 1.1.4).
18. Mount the *Cover Left* (RRP 1.1.1).
19. Mount the *Cover Assy I/F* (RRP 1.1.2).
20. Mount the *Fuser Assy* (RRP 6.1.3).
21. Mount the *Cover Assy Rear* (RRP 1.2.3).
22. Mount the *Cover Front L/H* (RRP 1.1.10).
23. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.4 Harness Assy DUP-M (PL10.1.9) continued

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RRP 10.1.5 PWBA CONN (PL10.1.11)

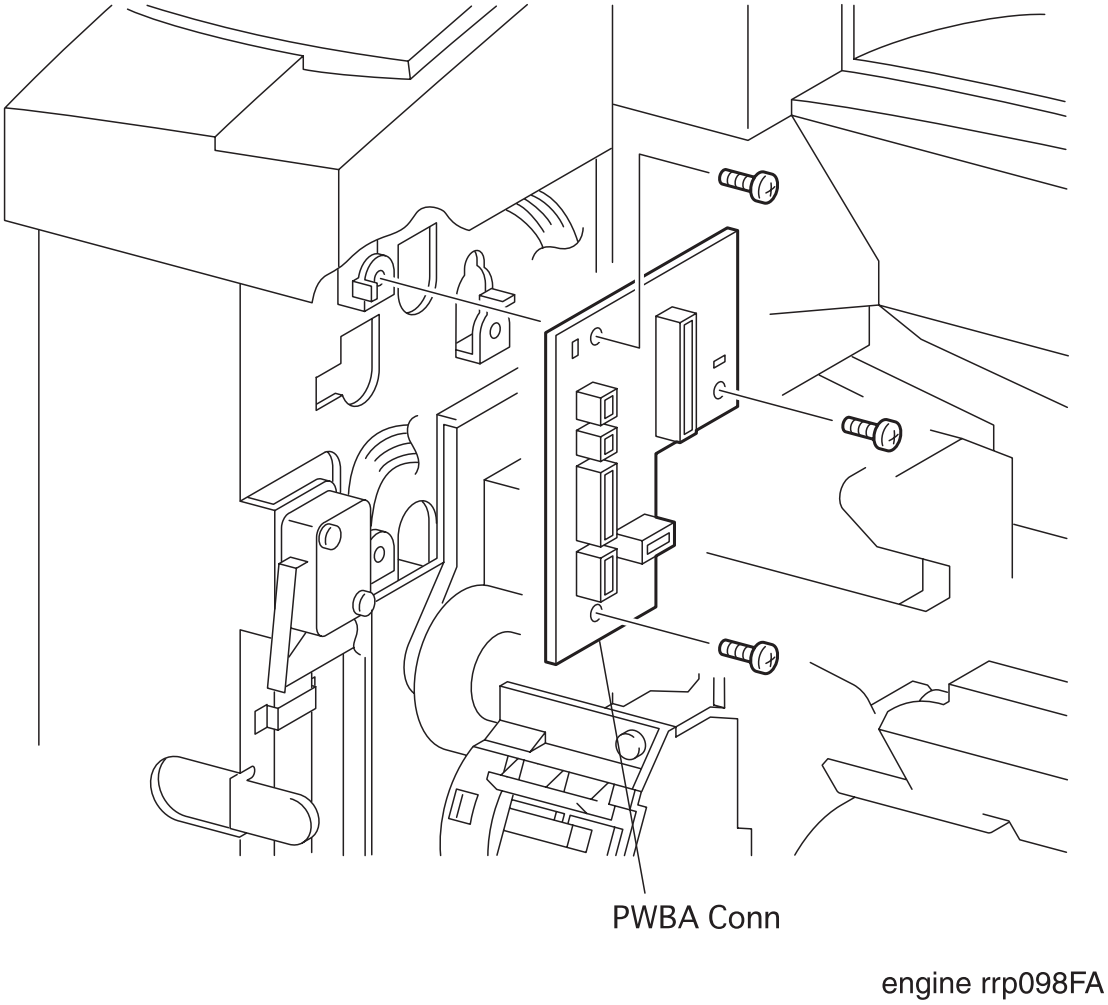

Figure 103. PWBA CONN Removal

RRP 10.1.5 PWBA CONN (PL10.1.11) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Cover Assy Top* (RRP 1.1.4).
6. Remove the *Plate Assy Left* (RRP 9.1.1).
7. Unplug the connector (P/J41) from the *PWBA CONN*.
8. Unplug the connector (P/J42) from the *PWBA CONN*.
9. Unplug the connector (P/J43) from the *PWBA CONN*.
10. Unplug the connector (P/J44) from the *PWBA CONN*.
11. Unplug the connector (P/J45) from the *PWBA CONN*.
12. Unplug the connector (P/J231) from the *PWBA CONN*.
13. Remove the three screws securing the *PWBA CONN* to the printer.
14. Remove the *PWBA CONN* from the printer.

Replacement

1. Align the *PWBA CONN* with it mount position to the printer.
2. Secure the *PWBA CONN* to the printer with three screws.
3. Plug the connector (P/J41) in the *PWBA CONN*.
4. Plug the connector (P/J42) in the *PWBA CONN*.
5. Plug the connector (P/J43) in the *PWBA CONN*.
6. Plug the connector (P/J44) in the *PWBA CONN*.
7. Plug the connector (P/J45) in the *PWBA CONN*.
8. Plug the connector (P/J231) in the *PWBA CONN*.
9. Mount the *Plate Assy Left* (RRP 9.1.1).
10. Mount the *Cover Assy Top* (RRP 1.1.4).
11. Mount the *Cover Left* (RRP 1.1.1).
12. Mount the *Cover Assy I/F* (RRP 1.1.2).
13. Mount the *Cover Front L/H* (RRP 1.1.10).
14. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.6 Switch Assy I/L Front (PL10.1.12)

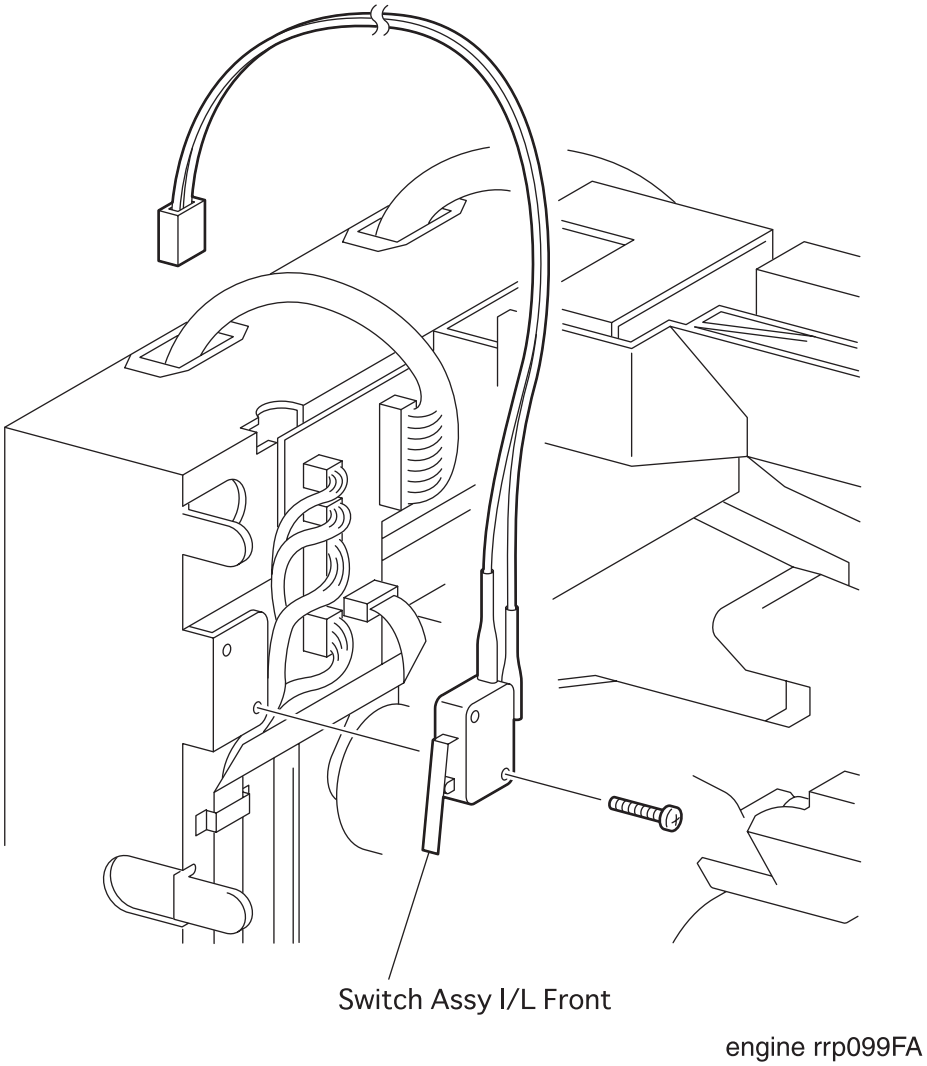

Figure 104. Switch Assy I/L Front Removal

RRP 10.1.6 Switch Assy I/L Front (PL10.1.12) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Cover Assy Top* (RRP 1.1.4).
6. Remove the *Plate Assy Left* (RRP 9.1.1).
7. Unplug the connector (P/J) from the *PWBA HKB PS* (PL10.1.17).
8. Unclamp the harness of *Switch Assy I/L Front* from the printer.
9. Remove the two screws securing the *Switch Assy I/L Front* to the printer.
10. Remove the *Switch Assy I/L Front* from the printer.

Replacement

1. Align the *Switch Assy I/L Front* with its mount position to the printer.
2. Secure the *Switch Assy I/L Front* to the printer with two screws.
3. Clamp the harness of *Switch Assy I/L Front* to the printer.
4. Plug the connector (P/J) to the *PWBA HKB PS* (PL10.1.17).
5. Mount the *Plate Assy Left* (RRP 9.1.1).
6. Mount the *Cover Assy Top* (RRP 1.1.4).
7. Mount the *Cover Left* (RRP 1.1.1).
8. Mount the *Cover Assy I/F* (RRP 1.1.2).
9. Mount the *Cover Front L/H* (RRP 1.1.10).
10. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.7 PWBA HKB26 MCU (PL10.1.13)

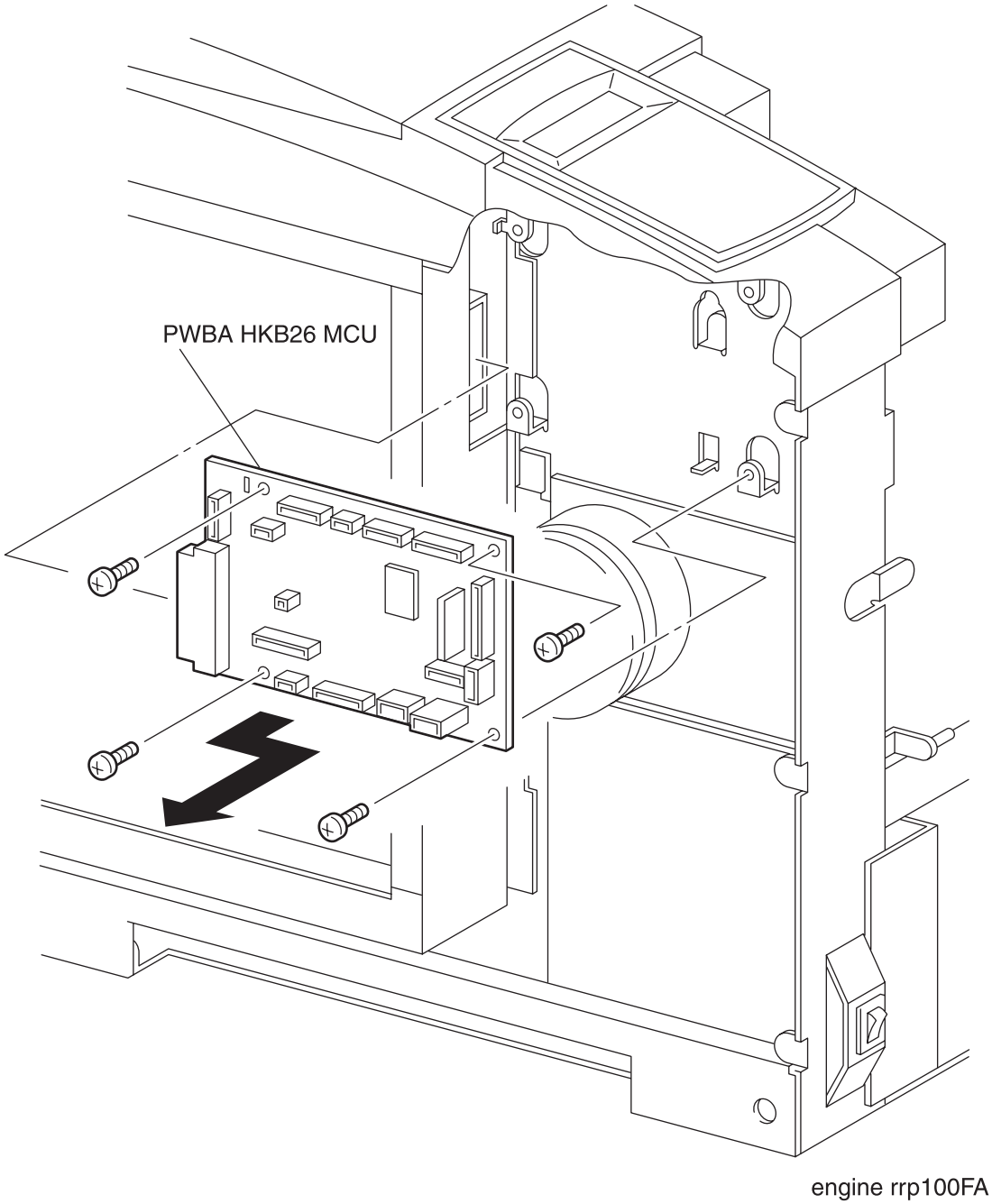

Figure 105. PWBA HKB26 MCU Removal

RRP 10.1.7 PWBA HKB26 MCU (PL10.1.13) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Cover Assy Top* (RRP 1.1.4).
6. Remove the *Plate Assy Left* (RRP 9.1.1).
7. Unplug the connector (P/J23) from the *PWBA HKB26 MCU*.
8. Unplug the connector (P/J32) from the *PWBA HKB26 MCU*.
9. Unplug the connector (P/J29) from the *PWBA HKB26 MCU*.
10. Unplug the connector (P/J30) from the *PWBA HKB26 MCU*.
11. Unplug the connector (P/J28) from the *PWBA HKB26 MCU*.
12. Unplug the connector (P/J33) from the *PWBA HKB26 MCU*.
13. Unplug the connector (P/J27) from the *PWBA HKB26 MCU*.
14. Unplug the connector (P/J26) from the *PWBA HKB26 MCU*.
15. Unplug the connector (P/J22) from the *PWBA HKB26 MCU*.
16. Unplug the connector (P/J37) from the *PWBA HKB26 MCU*.
17. Unplug the connector (P/J31) from the *PWBA HKB26 MCU*.
18. Unplug the connector (P/J21) from the *PWBA HKB26 MCU*.
19. Unplug the connector (P/J25) from the *PWBA HKB26 MCU*.
20. Unplug the connector (P/J34) from the *PWBA HKB26 MCU*.
21. Unplug the connector (P/J35) from the *PWBA HKB26 MCU*.
22. Remove the four screws securing the *PWBA HKB26 MCU* to the printer.
23. Remove the *PWBA HKB26 MCU* from the printer.

RRP 10.1.7 PWBA HKB26 MCU (PL10.1.13) continued

Replacement

1. Align the *PWBA HKB26 MCU* with it mount position to the printer.
2. Secure the *PWBA HKB26 MCU* to the printer with four screws.
3. Plug the connector (P/J23) in the *PWBA HKB26 MCU*.
4. Plug the connector (P/J32) in the *PWBA HKB26 MCU*.
5. Plug the connector (P/J29) in the *PWBA HKB26 MCU*.
6. Plug the connector (P/J30) in the *PWBA HKB26 MCU*.
7. Plug the connector (P/J28) in the *PWBA HKB26 MCU*.
8. Plug the connector (P/J33) in the *PWBA HKB26 MCU*.
9. Plug the connector (P/J27) in the *PWBA HKB26 MCU*.
10. Plug the connector (P/J26) in the *PWBA HKB26 MCU*.
11. Plug the connector (P/J22) in the *PWBA HKB26 MCU*.
12. Plug the connector (P/J37) in the *PWBA HKB26 MCU*.
13. Plug the connector (P/J31) in the *PWBA HKB26 MCU*.
14. Plug the connector (P/J21) in the *PWBA HKB26 MCU*.
15. Plug the connector (P/J25) in the *PWBA HKB26 MCU*.
16. Plug the connector (P/J34) in the *PWBA HKB26 MCU*.
17. Plug the connector (P/J35) in the *PWBA HKB26 MCU*.
18. Mount the *Plate Assy Left* (RRP 9.1.1).
19. Mount the *Cover Assy Top* (RRP 1.1.4).
20. Mount the *Cover Left* (RRP 1.1.1).
21. Mount the *Cover Assy I/F* (RRP 1.1.2).
22. Mount the *Cover Front L/H* (RRP 1.1.10).
23. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.7 PWBA HKB26 MCU (PL10.1.13) continued

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RRP 10.1.8 PWBA HKB 5VDC (PL10.1.14)

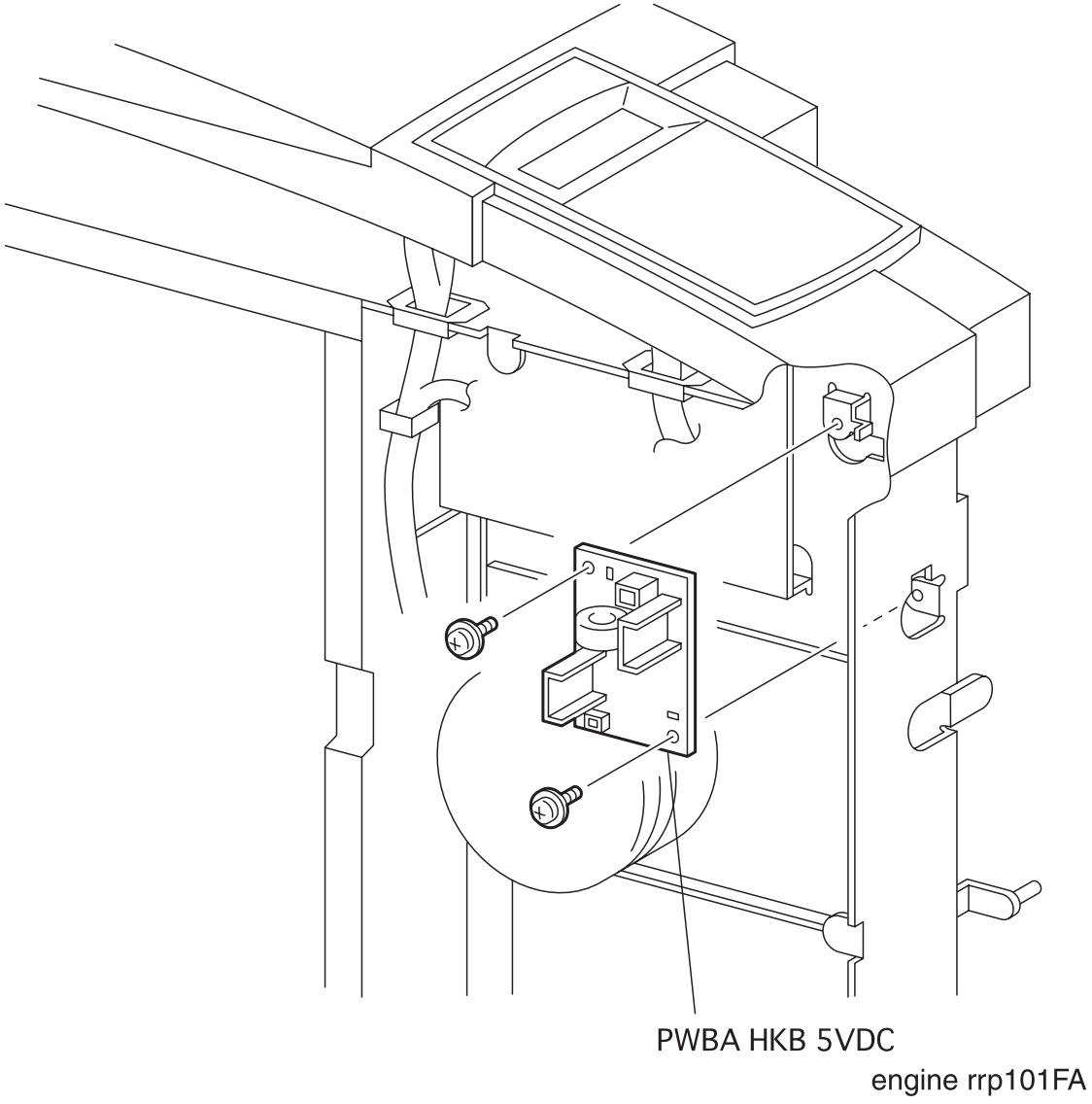

Figure 106. PWBA HKB 5VDC Removal

RRP 10.1.8 PWBA HKB 5VDC (PL10.1.14) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Cover Assy Top* (RRP 1.1.4).
6. Remove the *Plate Assy Left* (RRP 9.1.1).
7. Unplug the connector (P/J288) from the *PWBA HKB 5VDC*.
8. Unplug the connector (P/J101) from the *PWBA HKB 5VDC*.
9. Remove the two screws securing the *PWBA HKB 5VDC* to the printer.
10. Remove the *PWBA HKB 5VDC* from the printer.

Replacement

1. Align the *PWBA HKB 5VDC* with it mount position to the printer.
2. Secure the *PWBA HKB 5VDC* to the printer with two screws.
3. Plug the connector (P/J101) to the *PWBA HKB 5VDC*.
4. Plug the connector (P/J288) to the *PWBA HKB 5VDC*.
5. Mount the *Plate Assy Left* (RRP 9.1.1).
6. Mount the *Cover Assy Top* (RRP 1.1.4).
7. Mount the *Cover Left* (RRP 1.1.1).
8. Mount the *Cover Assy I/F* (RRP 1.1.2).
9. Mount the *Cover Front L/H* (RRP 1.1.10).
10. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.9 PWBA HKB PS (PL10.1.17)

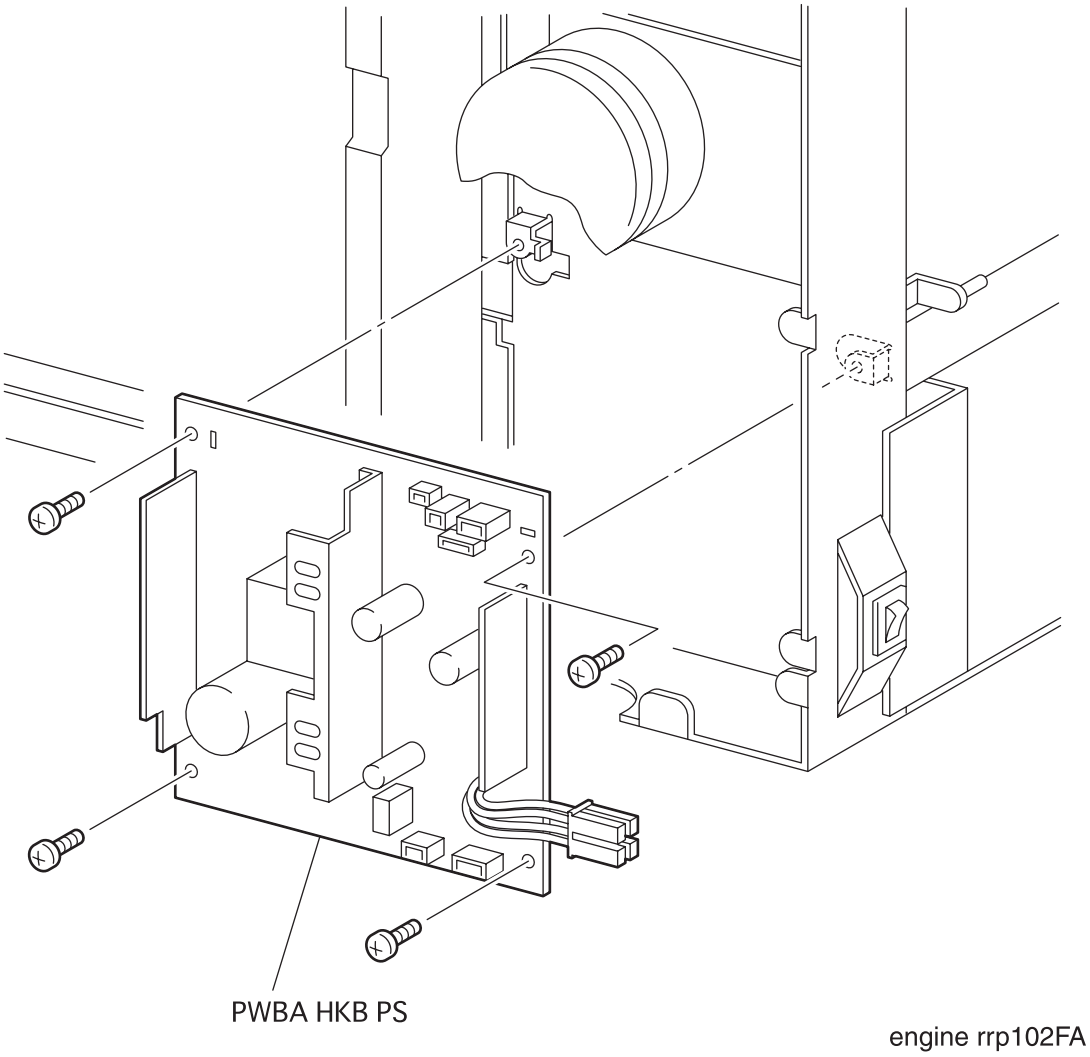

Figure 107. PWBA HKB PS Removal

RRP 10.1.9 PWBA HKB PS (PL10.1.17) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Cover Assy Top* (RRP 1.1.4).
6. Remove the *Plate Assy Left* (RRP 9.1.1).
7. Remove the *Plate Handle* (RRP 9.1.3).
8. Unplug the connector (P/J11) from the *PWBA HKB PS*.
9. Unplug the connector (P/J285) from the *PWBA HKB PS*.
10. Unplug the connector (P/J283) from the *PWBA HKB PS*.
11. Unplug the connector (P/J281) from the *PWBA HKB PS*.
12. Unplug the connector (P/J284) from the *PWBA HKB PS*.
13. Unplug the connector (P/J281) from the *PWBA HKB PS*.
14. Remove the four screws securing the *PWBA HKB PS* to the printer.

NOTE

In the following steps, do not detach *Main Switch* (PL10.1.18) and *PWBA HKB PS* far away because they are connected with the harness.

15. Detach the *PWBA HKB PS* a little from the printer.
16. Connect the connector (P/J) of *PWBA HKB PS* to the *Main Switch* (PL10.1.8) on the printer.

RRP 10.1.9 PWBA HKB PS (PL10.1.17) continued

Replacement

1. Connect the connector (P/J) of *PWBA HKB PS* to the *Main Switch* (PL10.1.8) on the printer.
2. Align the *PWBA HKB PS* with it mount position to the printer.
3. Secure the *PWBA HKB PS* to the printer with four screws.
4. Plug the connector (P/J11) in the *PWBA HKB PS*.
5. Plug the connector (P/J285) in the *PWBA HKB PS*.
6. Plug the connector (P/J283) in the *PWBA HKB PS*.
7. Plug the connector (P/J281) in the *PWBA HKB PS*.
8. Plug the connector (P/J284) in the *PWBA HKB PS*.
9. Plug the connector (P/J281) in the *PWBA HKB PS*.
10. Mount the *Plate Handle* (RRP 9.1.3).
11. Mount the *Plate Assy Left* (RRP 9.1.1).
12. Mount the *Cover Assy Top* (RRP 1.1.4).
13. Mount the *Cover Left* (RRP 1.1.1).
14. Mount the *Cover Assy I/F* (RRP 1.1.2).
15. Mount the *Cover Front L/H* (RRP 1.1.10).
16. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.9 PWBA HKB PS (PL10.1.17) continued

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RRP 10.1.10 Main Switch (PL10.1.18)

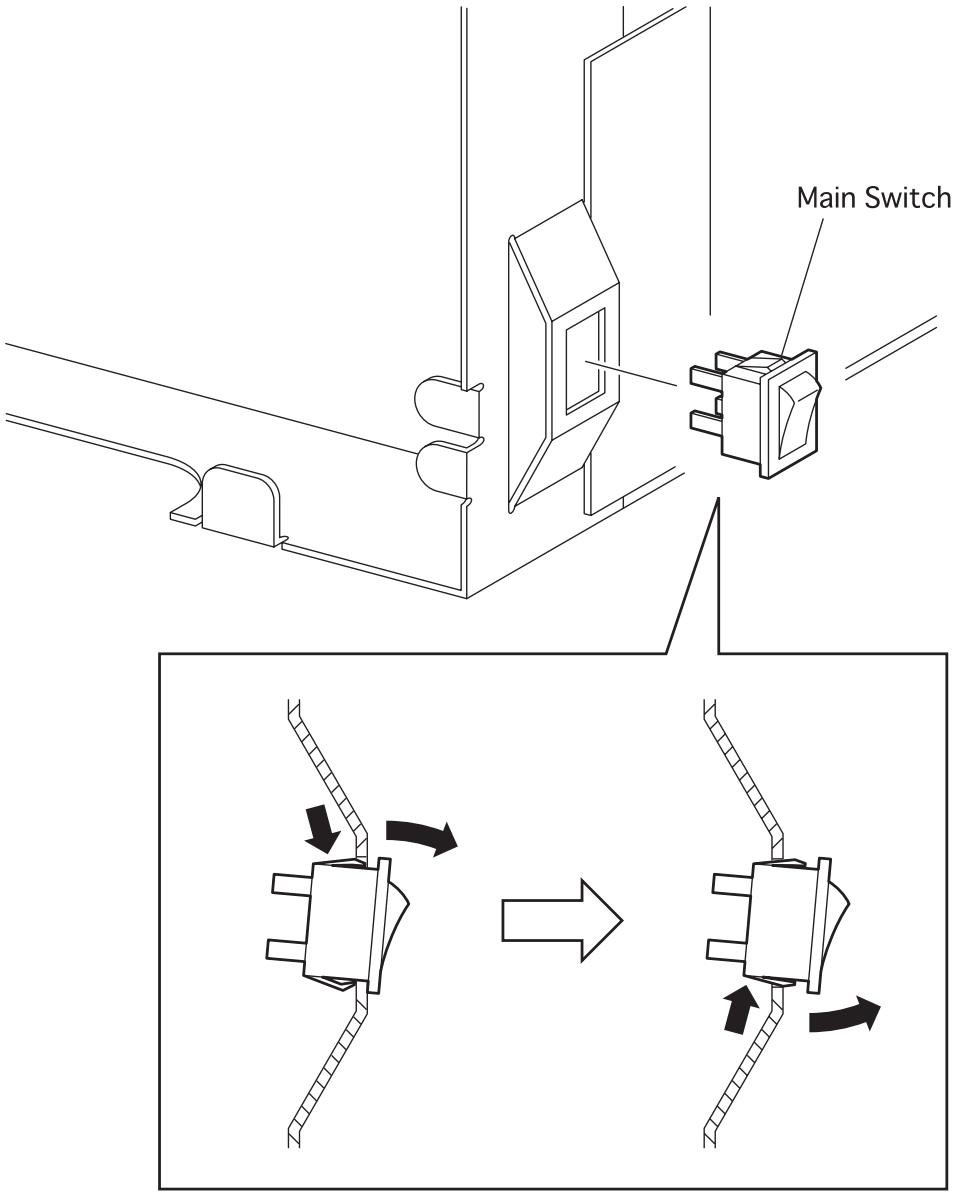


Figure 108. Main Switch Removal

RRP 10.1.10 Main Switch (PL10.1.18) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Cover Assy I/F* (RRP 1.1.2).
4. Remove the *Cover Left* (RRP 1.1.1).
5. Remove the *Cover Assy Top* (RRP 1.1.4).
6. Remove the *Plate Assy Left* (RRP 9.1.1).
7. Remove the *Plate Handle* (RRP 9.1.3).

NOTE

In the following steps, do not detach the *Main Switch* and the *PWBA HKB PS* (PL10.1.17) far away because they are connected with the harness.

8. Remove the *PWBA HKB Assy* (RRP 10.1.9).
9. Push The rear of Main Switch so that it comes out of the front from the printer.

Replacement

NOTE

Align the position exactly, mount the *Main Switch* on the printer with its ON side up.

1. Align the *Main Switch* with it mount position to the printer.
2. Fit the *Main Switch* in the printer to secure.
3. Mount the *PWBA HKB Assy* (RRP 10.1.9).
4. Mount *Plate Handle* (RRP 9.1.3).
5. Mount the *Plate Assy Left* (RRP 9.1.1).
6. Mount the *Cover Assy Top* (RRP 1.1.4).
7. Mount the *Cover Left* (RRP 1.1.1).
8. Mount the *Cover Assy I/F* (RRP 1.1.2).
9. Mount the *Cover Front L/H* (RRP 1.1.10).
10. Mount the *Cover Assy Front* (RRP 1.1.8).

RRP 10.1.11 PWBA HVPS (PL10.1.20)

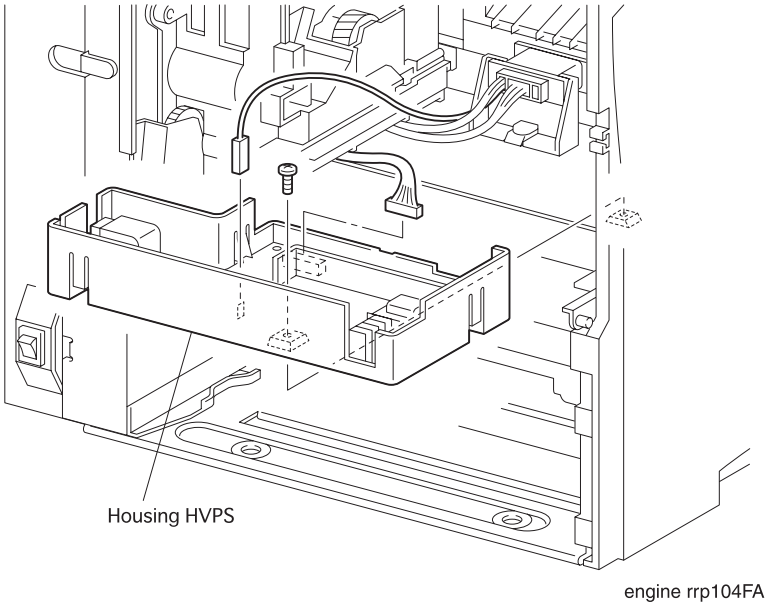


Figure 109. PWBA HVPS Removal(1)

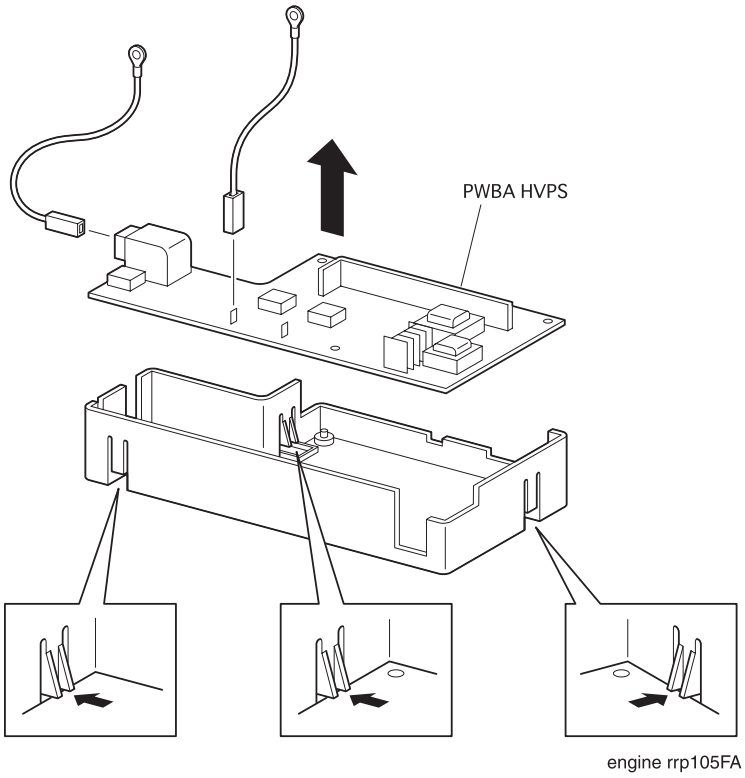


Figure 110. PWBA HVPS Removal(2)

RRP 10.1.11 PWBA HVPS (PL10.1.20) continued

Removal

1. Remove the *Cover Assy Front* (RRP 1.1.8).
2. Remove the *Cover Front L/H* (RRP 1.1.10).
3. Remove the *Chute MBF Assy* (RRP 4.1.1).
4. Remove the *Shaft 14* (RRP 5.1.10).
5. Remove the *Gear 14* (RRP 5.1.10).
6. Remove the *P/H Assy* (RRP 5.1.1).
7. Remove the *BTR Assy* (RRP 6.1.1).
8. Remove the *Chute Trans Assy* (RRP 6.1.2).
9. Unplug the connector (P/J261) from the *PWBA HVPS*.
10. Unplug the connector (P/J262) from the *PWBA HVPS*.
11. Remove the one screw securing the *PWBA HVPS* together with *Housing HVPS* (PL10.1.21) to the printer.
12. Remove the *Housing HVPS* together with *Wire Assy DTS* (PL6.1.10), *Wire Assy TR* (PL6.1.11) and *PWBA HVPS* from the printer.
13. Unplug the connector (P/J DTS) of *Wire Assy DTS* from the *PWBA HVPS*, and remove the *Wire Assy DTS*.
14. Unplug the connector (P/J TR) of *Wire Assy TR* from the *PWBA HVPS*, and remove the *Wire Assy TR*.
15. Deflecting three hooks that secure the *PWBA HVPS* to the *Housing HVPS*, remove the *PWBA HVPS* from the *Housing HVPS*.

Replacement

1. Deflecting three hooks of *Housing HVPS* (PL10.1.21), mount the *PWBA HVPS* on the *Housing HVPS*.
2. Plug the connector (P/J TR) of *Wire Assy TR* (PL6.1.11) to the *PWBA HVPS*.
3. Plug the connector (P/J DTS) of *Wire Assy DTS* (PL6.1.10) to the *PWBA HVPS*.
4. Mount the *Housing HVPS* together with *Wire Assy DTS*, *Wire Assy TR* and *PWBA HVPS* to the printer.
5. Secure the *PWBA HVPS* together with *Housing HVPS* to the printer with one screw.
6. Plug the connector (P/J262) to the *PWBA HVPS*.
7. Plug the connector (P/J261) to the *PWBA HVPS*.
8. Mount *Chute Trans Assy* (RRP 6.1.2).
9. Mount the *BTR Assy* (RRP 6.1.1).
10. Mount the *P/H Assy* (RRP 5.1.1).
11. Mount the *Gear 14* (RRP 5.1.10).
12. Mount the *Shaft 14* (RRP 5.1.10).
13. Mount *Chute MBF Assy* (RRP 4.1.1).
14. Mount the *Cover Front L/H* (RRP 1.1.10).
15. Mount the *Cover Assy Front* (RRP 1.1.8).

Section 11 - Plug/Jack (P/J) Connector Locations Contents

4. Plug/Jack (P/J) Connector Locations 11-1
4.1 Plug/Jack (P/J) Connector Location Table 11-2
4.2 Plug/Jack (P/J) Connector Location Diagrams 11-6

4. Plug/Jack (P/J) Connector Locations

4.1 Plug/Jack (P/J) Connector Location Table

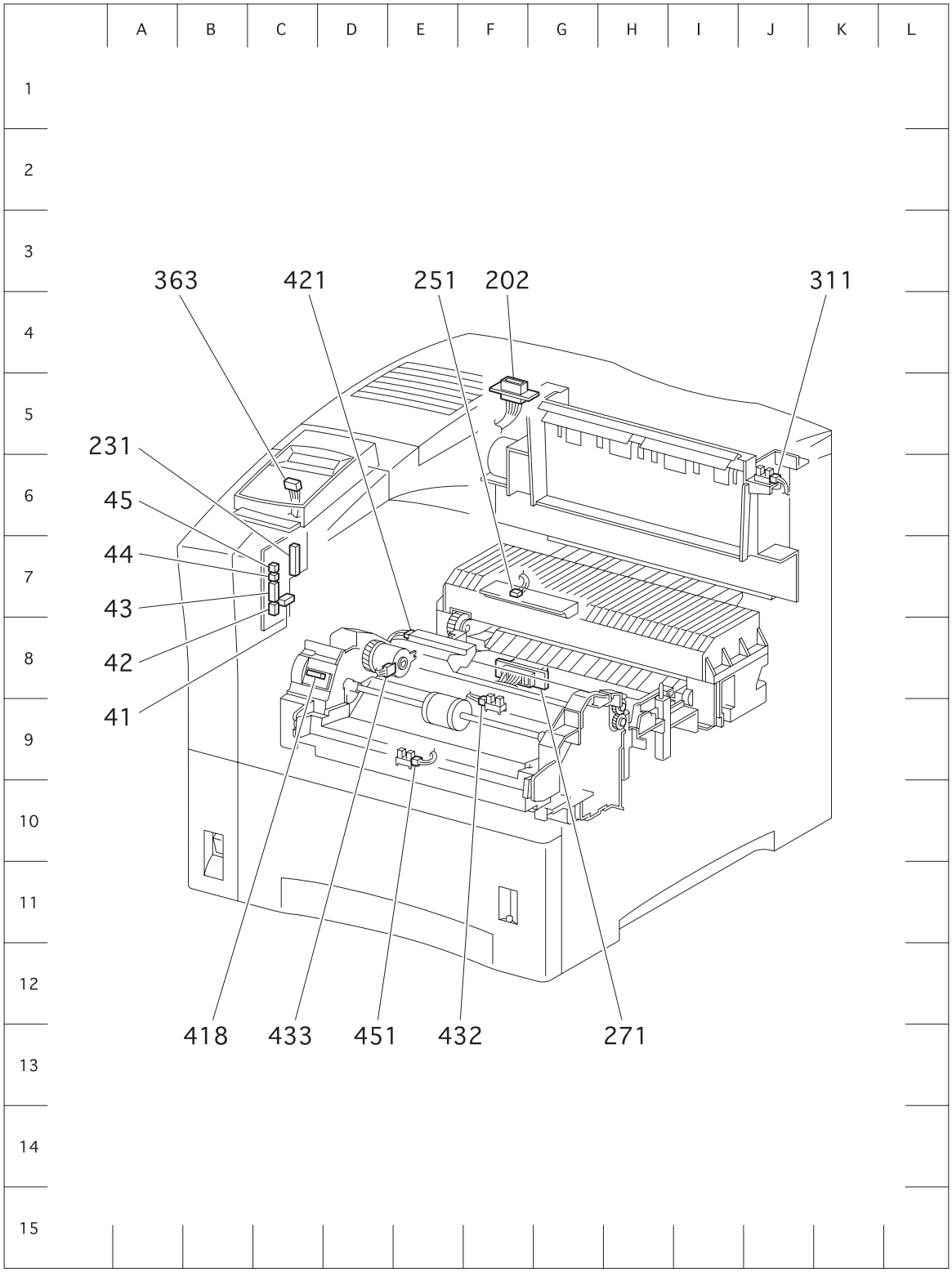
P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	PL	
1	---	PWBA HKB PS	10.1	---		Connects PWBA HKB PS and PWBA HKB 5VDC.
11	I-42	PWBA HKB PS	10.1	Harness Assembly Fuser-M	6.1	Connects PWBA HKB PS and Fuser Assembly.
21	I-33	PWBA HKB26 MCU	10.1	Harness Assembly ROS	8.1	Connects PWBA HKB26 MCU and ROS Assembly (SOS Assembly, Scanner Assembly, PWBA LDD).
22	I-34	PWBA HKB26 MCU	10.1	Harness Assembly ROS	8.1	Connects PWBA HKB26 MCU and ROS Assembly (PWBA LDD).
23	J-33	PWBA HKB26 MCU	10.1	Harness Assembly CONN	10.1	Connects PWBA HKB26 MCU and PWBA CONN.
25	I-33	PWBA HKB26 MCU	10.1	Harness Assembly CRU SNS	8.1	Connects PWBA HKB26 MCU and Senser Assembly CRU.
26	I-34	PWBA HKB26 MCU	10.1	Harness Assembly HVPS	10.1	Connects PWBA HKB26 MCU and PWBA HVPS.
27	I-34	PWBA HKB26 MCU	10.1	Harness Assembly Fuser-M	6.1	Connects PWBA HKB26 MCU and Fuser Assembly.
28	J-34	PWBA HKB26 MCU	10.1	Harness Assembly LVPS	10.1	Connects PWBA HKB26 MCU and PWBA HKB PS.
29	J-33	PWBA HKB26 MCU	10.1	Motor Assembly Main	8.1	Connects PWBA HKB26 MCU and Motor Assembly Main.
30	J-33	PWBA HKB26 MCU	10.1	Switch Assembly I/L Rear	10.1	Connects PWBA HKB26 MCU and Switch Assemmbly I/L Rear.
31	I-33	PWBA HKB26 MCU	10.1	Harness Assembly FS SNR	7.1	Connects PWBA HKB26 MCU and Sensor Photo:Exit.
32	J-33	PWBA HKB26 MCU	10.1	Motor Assembly Exit	7.1	Connects PWBA HKB26 MCU and Motor Assembly Exit.
33	I-34	PWBA HKB26 MCU	10.1	Harness Assembly Feeder	9.1	Connects PWBA HKB26 MCU and PWBA Size 1.
34	I-32	PWBA HKB26 MCU	10.1	Harness Assembly DUP-M	10.1	Connects PWBA HKB26 MCU and Duplex Assembly.
35	J-32	PWBA HKB26 MCU	10.1	Harness Assembly OCT-M	10.1	Connects PWBA HKB26 MCU and Offset Catch Tray.
36	H-39	PWBA HKB26 MCU	10.1	PWB ESS	10.1	Connects PWBA HKB26 MCU and PWB ESS.
37	H-33	PWBA HKB26 MCU	10.1	---	---	---

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	PL	
41	C-7	PWBA CONN	10.1	Connector Assembly ENV	4.1	Connects PWBA CONN and Connector Assembly ENV.
42	C-7	PWBA CONN	10.1	Harness Assembly Toner Sensor	5.1	Connects PWBA CONN and Toner Sensor.
43	C-7	PWBA CONN	10.1	Harness Assembly Regi.	5.1	Connects PWBA CONN, Sensor Photo:Regi. and Clutch Regi.
44	C-7	PWBA CONN	10.1	Solenoid Pick Up	4.1	Connects PWBA CONN and Solenoid Pick Up.
45	C-7	PWBA CONN	10.1	Harness Assembly MBF NOPAP	4.1	Connects PWBA CONN and Sensor Photo:Paper Set.
51	I-19	PWBA Size 1	9.1	Harness Assembly Size M	9.1	Connects PWBA Size 1and Option Feeder.
61	H-19	PWBA Size 1	9.1	PWBA Feeder	3.1	Connects PWBA Size 1and PWBA Feeder.
64	B-18	PWBA Feeder	3.1	Clutch Assembly Turn	3.1	Connects PWBA Feeder and Clutch Assembly Turn.
65	B-18	PWBA Feeder	3.1	Clutch Assembly Feed	3.1	Connects PWBA Feeder and Clutch Assembly Feed.
66	C-18	PWBA Feeder	3.1	Harness Assembly N/SNSR	3.1	Connects PWBA Feeder, Sensor Photo:Low Paper and Sensor Photo:Face Control.
67	B-18	PWBA Feeder	3.1	Harness Assembly N/MOT	3.1	Connects PWBA Feeder and Socket.
101	I-39	PWBA HKB 5VDC	10.1	---	---	Connects PWBA HKB 5VDC and PWBA HKB PS.
202	F-5	Frame Assembly	10.1	Harness Assembly OCT-M	10.1	Connects Offset Catch Tray and PWBA HKB26 MCU.

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	PL	
211	D-38	ROS Assembly	8.1	Harness Assembly ROS	8.1	Connects ROS Assembly (SOS Assembly) and PWBA HKB26 MCU.
212	F-39	ROS Assembly	8.1	Harness Assembly ROS	8.1	Connects ROS Assembly (Scanner Assembly) and PWBA HKB26 MCU.
213	E-39	ROS Assembly	8.1	Harness Assembly ROS	8.1	Connects ROS Assembly (PWBA LDD) and PWBA HKB26 MCU.
223	E-39	ROS Assembly	8.1	Harness Assembly ROS	8.1	Connects ROS Assembly (PWBA LDD) and PWBA HKB26 MCU.
231	C-7	PWBA CONN	10.1	Harness Assembly CONN	10.1	Connects PWBA CONN and PWBA HKB26 MCU.
251	F-7	Sensor Assembly CRU	8.1	Harness Assembly CRU SNS	8.1	Connects Sensor Assembly and PWBA HKB26 MCU.
261	G-25	PWBA HVPS	10.1	Harness Assembly HVPS	10.1	Connects PWBA HVPS and PWBA HKB26 MCU.
262	F-26	PWBA HVPS	10.1	Harness Assembly Fuser-M	6.1	Connects PWBA HVPS and Fuser Assembly.
271	F-8	Frame Assembly	---	Harness Assembly Fuser-M	6.1	Connects Fuser Assembly, PWBA HKB PS, PWBA HKB26 MCU and PWBA HVPS.
281	I-40	PWBA HKB PS	10.1	Harness Assembly LVPS	10.1	Connects PWBA HKB PS and PWBA HKB26 MCU.
282	I-40	PWBA HKB PS	10.1	Harness Assembly ESS	10.1	Connects PWBA HKB PS and PWB ESS.
283	I-40	PWBA HKB PS	10.1	Fun Assembly	9.1	Connects PWBA HKB PS and Fan Assembly.
284	I-40	PWBA HKB PS	10.1	Switch Assembly I/L Front	10.1	Connects PWBA HKB PS and Switch Assembly I/L Front.
285	I-42	PWBA HKB PS	10.1	Wire Assembly AC	10.1	Connects PWBA HKB PS and Wire Assembly AC.
287	H-41	PWB ESS	10.1	Harness Assembly ESS	10.1	Connects PWB ESS, PWBA HKB PS and PWBA HKB 5VDC.
288	I-38	PWBA HKB 5VDC	10.1	Harness Assembly ESS	10.1	Connects PWBA HKB 5VDC and PWB ESS.
291	I-40	Motor Assembly Main	8.1	Motor Asembly Main	8.1	Connects Motor Assembly Main and PWBA HKB26 MCU.

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	PL	
311	J-6	Chute Assembly Exit	7.1	Harness Assembly FS SNR	7.1	Connects Sensor Photo:Exit and PWBA HKB26 MCU.
331	I-18	PWBA Size 1	9.1	Harness Assembly Feeder	9.1	Connects PWBA Size 1 and PWBA HKB26 MCU.
341	E-41	Frame Assembly	10.1	Harness Assembly DUP-M	10.1	Connects Duplex Assembly and PWBA HKB26 MCU.
362	G-39	PWBA ESS	10.1	Harness Assembly Panel	1.1	Connects PWB ESS and Control Assembly Panel.
363	C-6	Control Assembly Panel	1.1	Harness Assembly Panel	1.1	Connects Control Assembly and PWB ESS.
418	D-8	Chute MBF Assembly	4.1	Connector Assembly ENV	4.1	Connects Envelope Feeder and PWBA CONN.
421	E-8	Toner Sensor	5.1	Harness Assembly Toner Sensor	5.1	Connects Toner Sensor and PWBA CONN.
432	F-8	P-H Assembly	5.1	Harness Assembly Regi	5.1	Connects Sensor Photo:Regi and PWBA CONN.
433	E-8	P-H Assembly	5.1	Harness Assembly Regi	5.1	Connects Clutch Regi and PWBA CONN.
451	E-9	Chute MBF Assembly	4.1	Harness Assembly MBF NOPAP	4.1	Connects Sensor Photo:Paper Set and PWBA CONN.
511	F-43	Housing Size Sensor	9.1	Harness Assembly Size M	9.1	Connects Option Feeder and PWBA Size 1.
641	C-26	Feeder Assembly	3.1	Clutch Assembly Turn	3.1	Connects Clutch Assembly Turn and PWBA Feeder.
651	C-26	Feeder Assembly	3.1	Clutch Assembly Feed	3.1	Connects Clutch Assembly Feed and PWBA Feeder.
661	G-27	Feeder Assembly	3.1	Harness Assembly N/SNSR	3.1	Connects Sensor Photo:Low paper and PWBA Feeder.
662	E-26	Feeder Assembly	3.1	Harness Assembly N/SNSR	3.1	Connects Sensor Photo:Face Control and PWBA Feeder.
671	E-26	Feeder Assembly	3.1	Harness Assembly N/MOT	3.1	Connects Socket and PWBA Feeder.
672	D-26	Feeder Assembly	3.1	Socket	3.1	Connects Feeder Assembly and Cassette Assembly.
673	D-26	Cassette Assembly	2.2	Motor Assembly	2.2	Connects Motor Assembly and Socket.
DTS	F-25	PWBA HVPS	10.1	Wire Assembly DTS	6.1	Connects PWBA HVPS and Chute Trans Assembly.
TR	E-25	PWBA HVPS	10.1	Wire Assembly TR	6.1	Connects PWBA HVPS and Chute Trans Assembly.

4.2 Plug/Jack (P/J) Connector Location Diagrams



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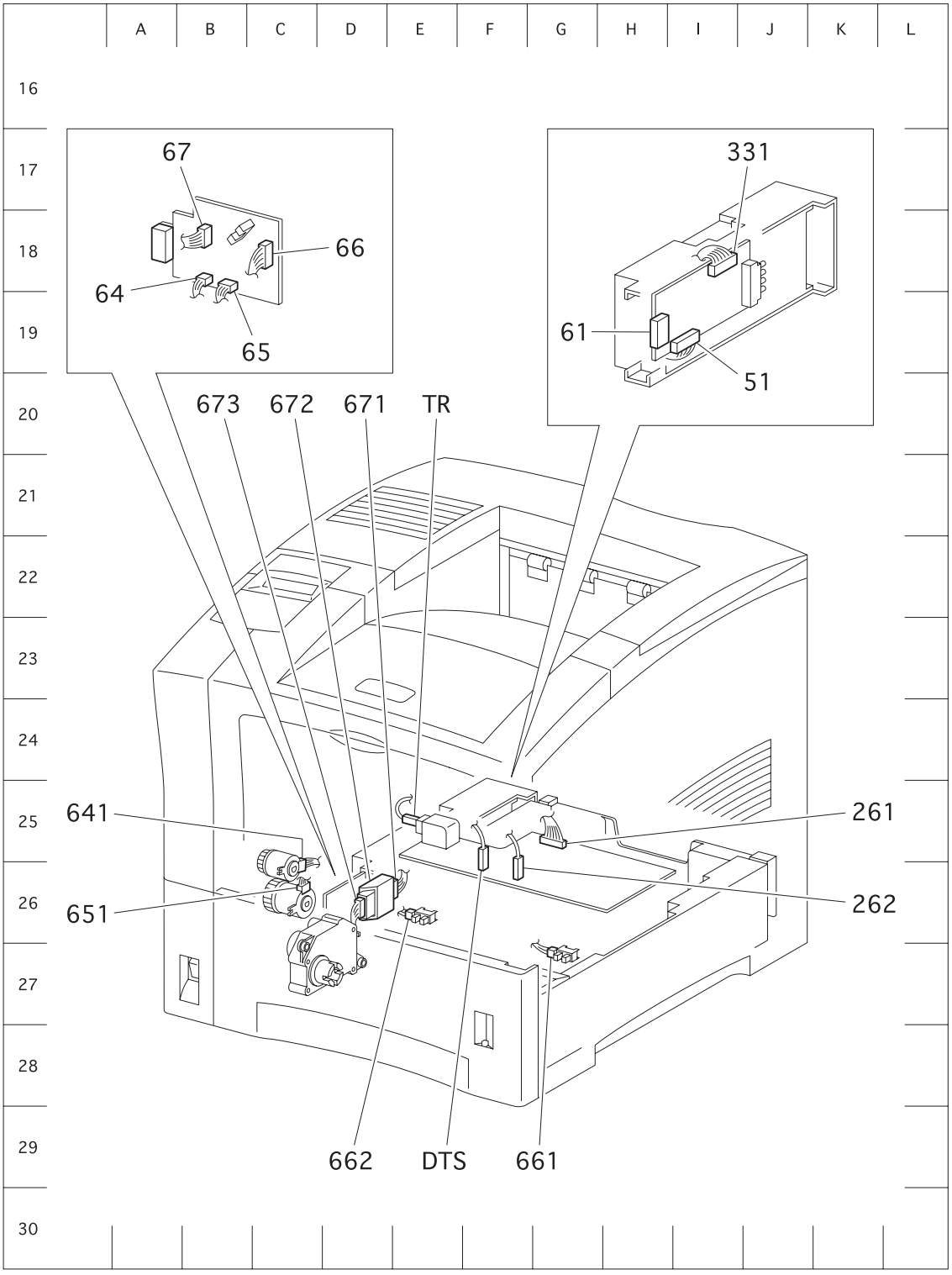
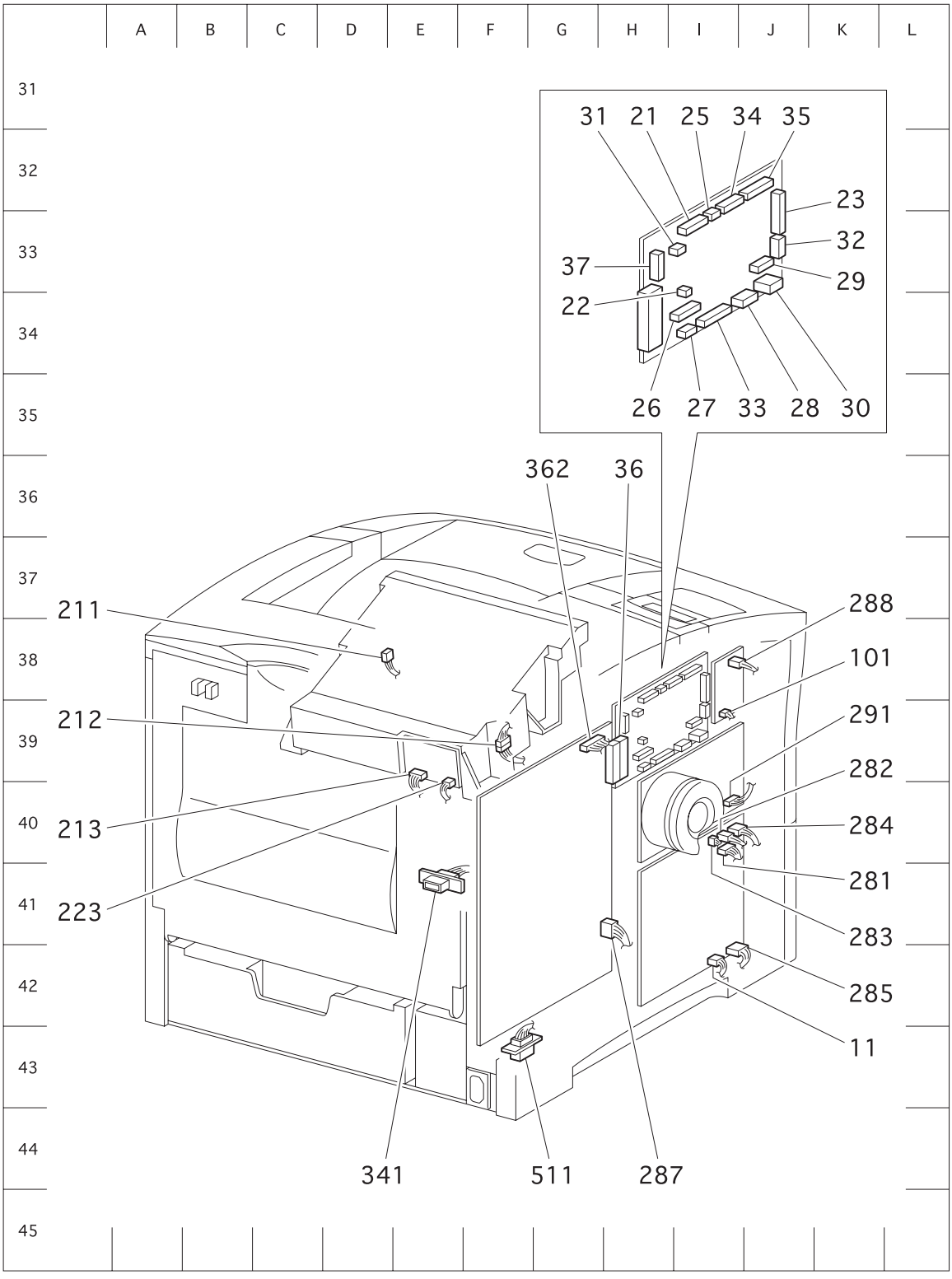


engine pj002FA



engine pj003FA

Section 12 - Parts List Contents

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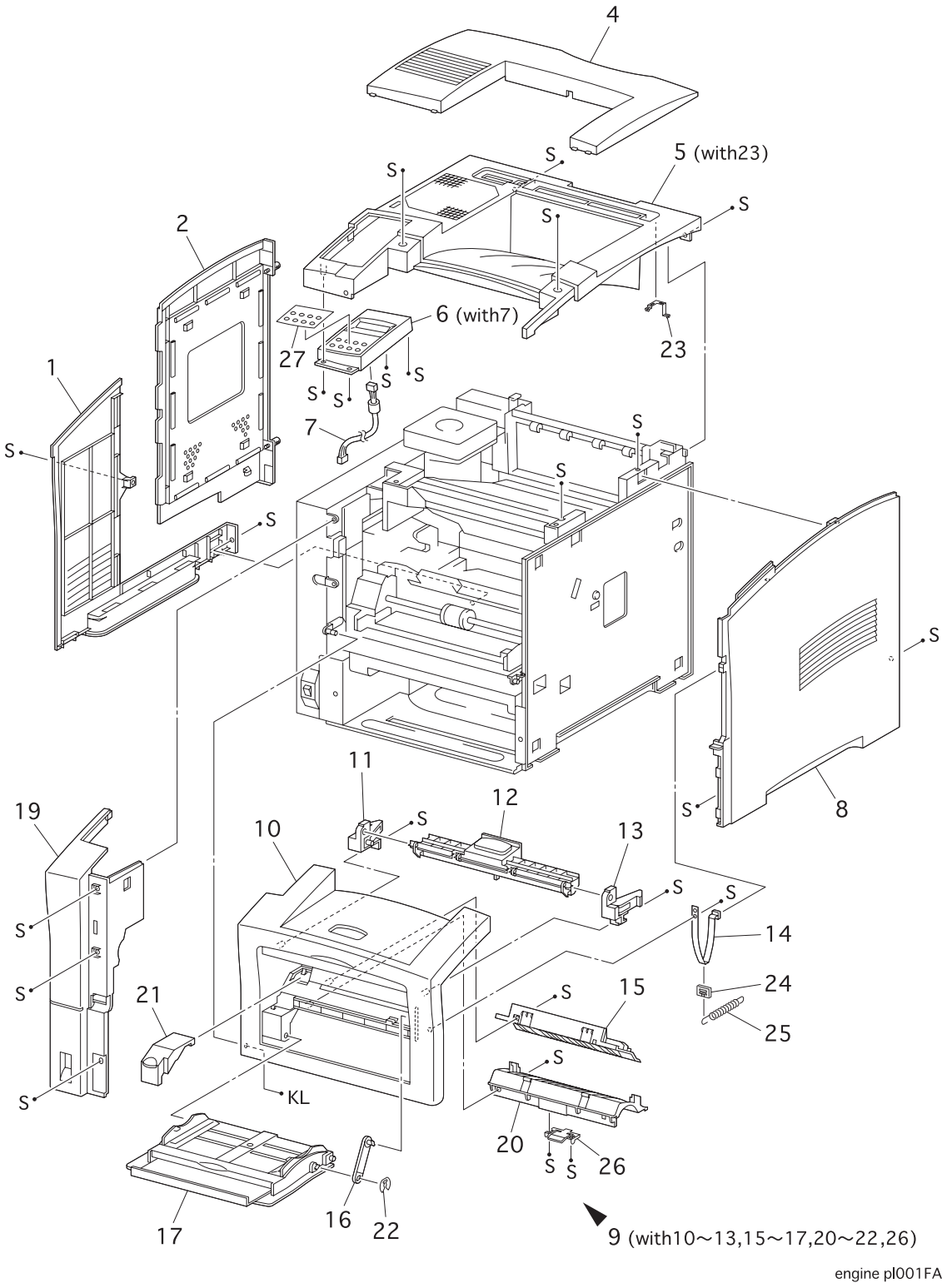
Using the Parts List

1. The numbers shown in each illustration correspond to the parts list number for that illustration.
2. Throughout this manual, parts are identified by the prefix “PL”, followed by a number, a decimal point, and another number. For example, PL3.1.12 means the part is item 12 of parts list 3.1.
3. The capital letters “C”, “E”, and “S” shown in an illustration stand for C-ring, E-ring, and Screw, respectively.
4. A shaded triangle t in an illustration indicates the item is part of an assembly.
5. The notation “with X~Y” following an part name indicates an assembly that is made up of components X through Y. For example, “1 (with 2~4)” means part 1 consists of part 2, part 3, and part 4.
6. The notation "RS" means that the part is a requested spare. Part numbers for these parts will be provided as soon as they are available.
7. An asterisk * following a part name indicates the page contains a note about this part.
8. The notation “J1<>J2 and P2” is attached to a wire harness. It indicates that connector jack 1 is attached to one end of the wire harness and connector jack 2 is attached to the other end that is plugged into plug 2.
9. A notation "(part of item 1.1)" indicates that the part is included with item 1.2.1 (PL1.2, line item 1).

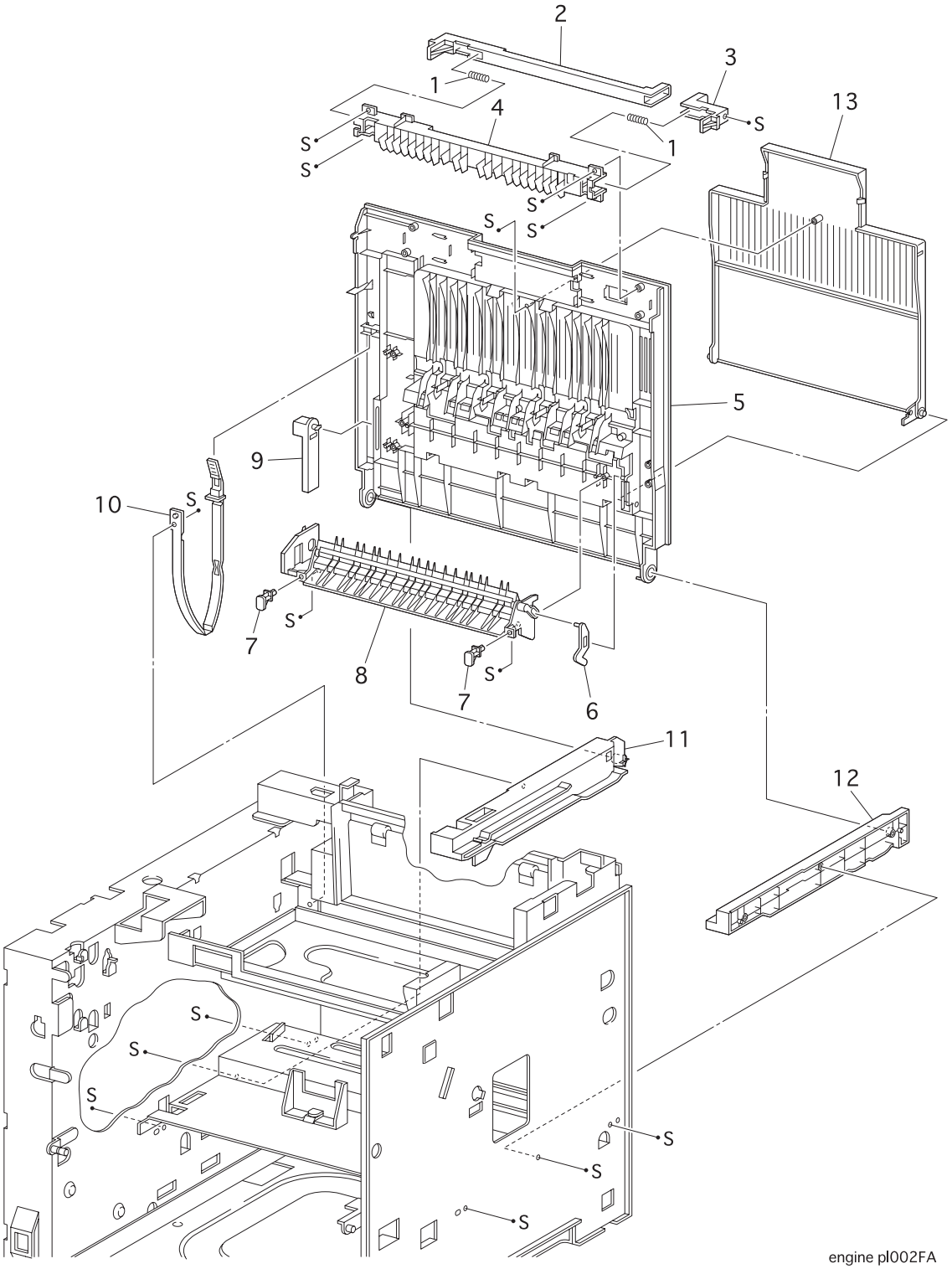
PL1.1 Covers I



PL1.1 Covers I

ITEM	PART NUMBER	PART NAME
1	53080401	COVER LEFT
2	53080501	COVER ASSY I/F
3	---	
4	53080601	COVER OPTION
5	53080701	COVER ASSY TOP (with 23)
6	50227201	CONTROL ASSY PANEL (with 7)
7	56735001	HARNESS ASSY PANEL (J362-J363)
8	53080801	COVER RIGHT
9	53080901	COVER ASSY FRONT (with 10~13,15~17,20~22,26)
10	---	COVER FRONT
11	---	LATCH ASSY L
12	---	LEVER
13	---	LATCH ASSY R
14	53081101	STOPPER COVER
15	---	CHUTE ENV
16	50226901	STOPPER TRAY
17	50225601	TRAY ASSY MBF
18	---	
19	53081501	COVER FRONT L/H
20	---	CHUTE MBF
21	---	ENV GEAR COVER
22	50710001	CLIP
23	---	SPRING EARTH EXIT 2
24	---	JOINT SPRING
25	---	SPRING FRONT
26	50225901	CLEANING PAD ASSY
27	---	CONTROL PANEL OVERLAY

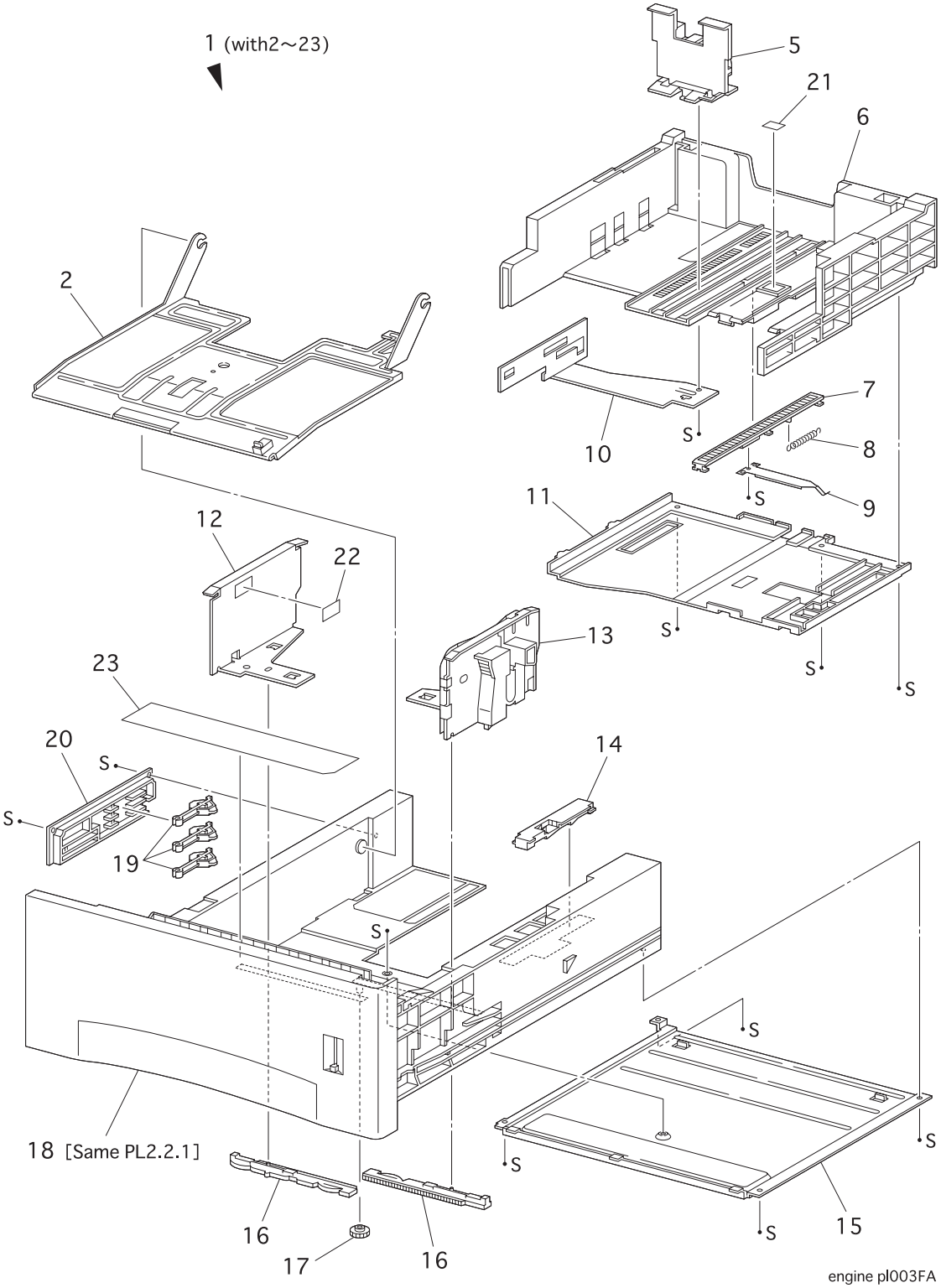
PL1.2 Covers II



PL1.2 Covers II

ITEM	PART NUMBER	PART NAME
1	---	SPRING LATCH
2	---	LATCH L
3	---	LATCH R
4	---	COVER LATCH
5	---	COVER REAR
6	---	ARM DIRECTION
7	---	CAP ENVELOPE
8	---	CHUTE ASSY FACE UP
9	---	STOPPER PIVOT R
10	50609001	STOPPER
11	---	GUIDE RAIL DUP L
12	---	GUIDE RAIL DUP R
13	---	OVER FACE UP
98	58261501	KIT CAP ENVELOPE (qty. 2 of item 7)
99	53081001	COVER ASSY REAR (with 1~9)

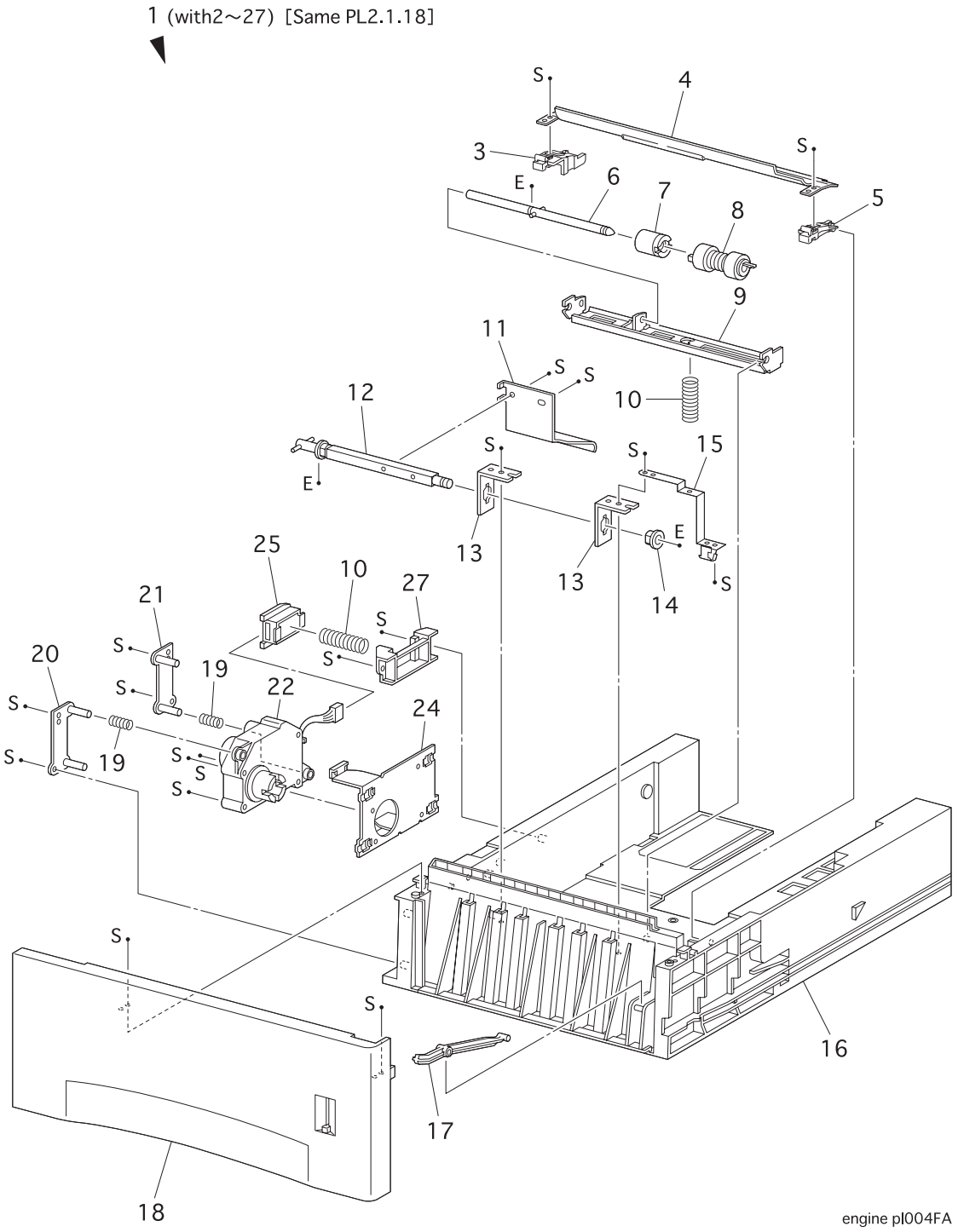
PL2.1 Paper Cassette I



PL2.1 Paper Cassette I

ITEM	PART NUMBER	PART NAME
1	---	CASSETTE ASSY (with 2~23)
2	---	PLATE ASSY BOTTOM
3	---	
4	---	
5	58261601	KIT GUIDE END
6	---	HOUSING EXTENSION
7	---	SLIDE RACK
8	---	SPRING EXTENSION
9	---	LATCH SPRING
10	---	PLATE SIZE
11	---	BASE EXTENSION
12	---	GUIDE SIZE L
13	---	GUIDE ASSY SIDE R
14	---	LINK
15	---	BASE CST
16	---	RACK
17	---	PINION
18	---	CASSETTE SUB ASSY [same PL2.21]
19	---	ACTUATOR CST
20	---	COVER ACTUATOR
21	---	LABEL BUTTON
22	---	LABEL INDICATOR
23	---	LABEL CST INSTRUCTION

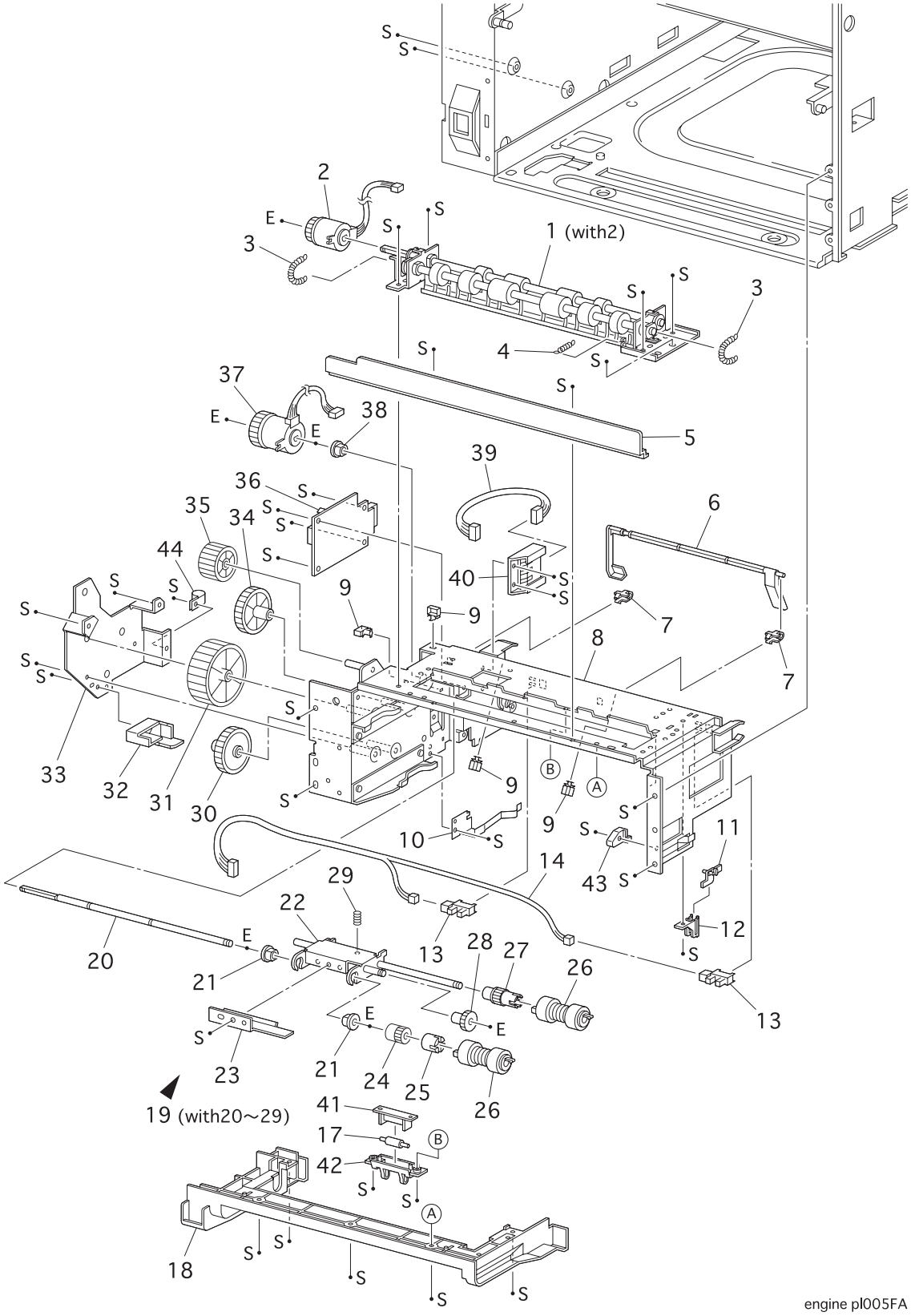
PL2.2 Paper Cassette II



PL2.2 Paper Cassette II

ITEM	PART NUMBER	PART NAME
1	---	CASSETTE SUB ASSY (with 2~27) [Same PL2.1.18] (REF. ONLY)
2	---	
3	---	CHUTE RETARD BASE L
4	---	CHUTE RETARD
5	---	CHUTE RETARD BASE R
6	---	SHAFT ASSY RETARD
7	51401201	CLUTCH ASSY FRICTION
8	---	ROLL ASSY
9	---	BRACKET RETARD
10	50933901	SPRING RETARD
11	---	PLATE TONGUE
12	---	SHAFT ASSY TONGUE
13	---	HOLDER SHAFT LIFT UP
14	---	BEARING
15	---	SPRING EARTH LIFT UP
16	---	HOUSING CASSETTE
17	---	LEVER
18	---	HANDLE ASSY CASSETTE
19	---	SPRING MOTOR
20	---	HOLDER R
21	---	HOLDER L
22	56517001	MOTOR ASSY
23	---	
24	---	HOLDER ASSY MOTOR
25	56734901	CONNECTOR
26	---	
27	---	GUIDE SOCKET
99	58261701	KIT ROLL FEED (qty. 3 of item 8)

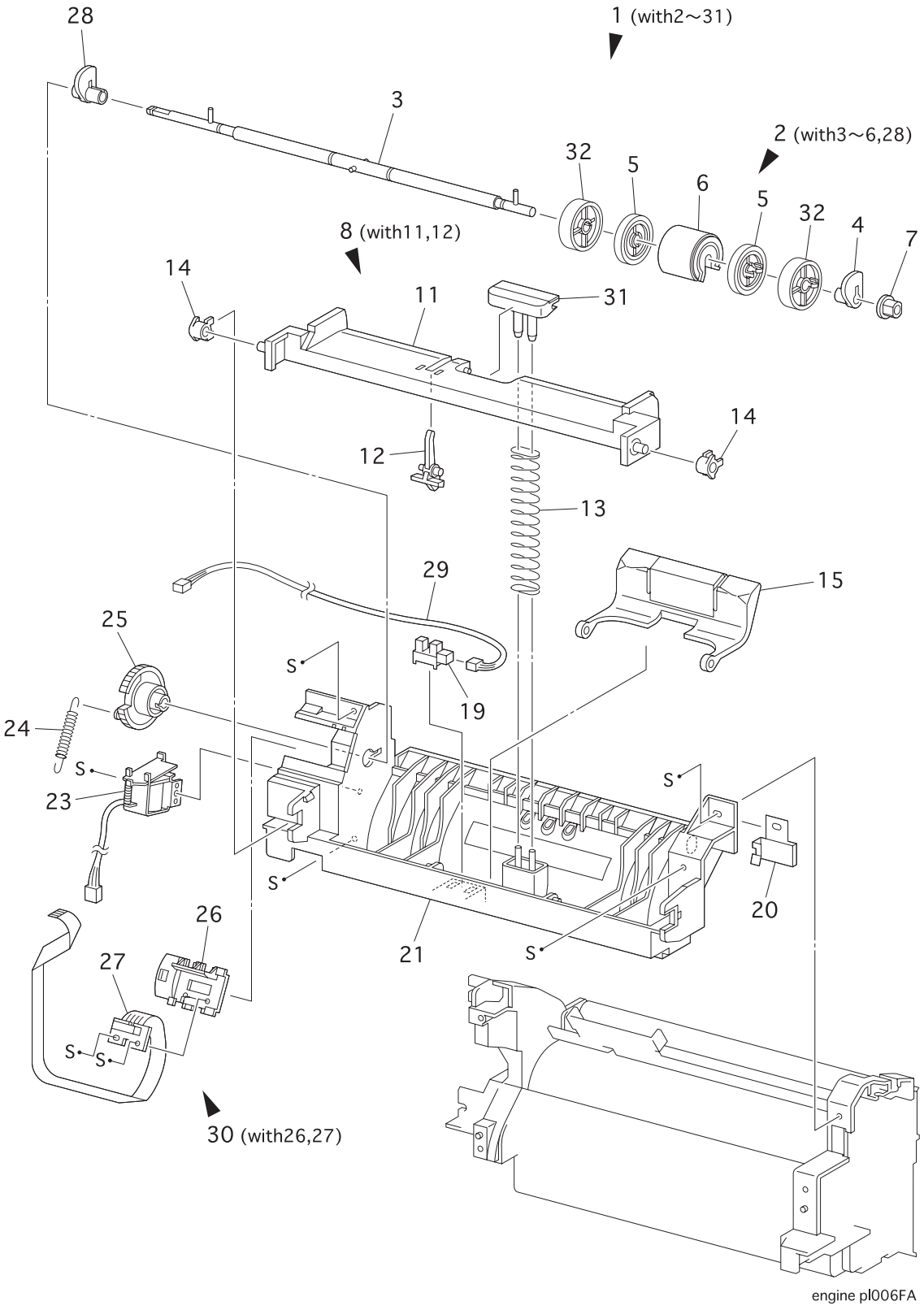
PL3.1 Paper Feeder



PL3.1 Paper Feeder

ITEM	PART NUMBER	PART NAME
1	50415501	ROLL ASSY TURN (with 2)
2	51401301	CLUTCH ASSY TURN
3	---	SPRING EXTENSION
4	50934001	SPRING CHUTE
5	---	COVER CST FEED
6	53352101	ACTUATOR N/P
7	53352201	SUPPORT ACTUATOR
8	---	FRAME ASSY FEEDER
9	---	CLAMP
10	---	SPRING LATCH L
11	---	ACTUATER LOW PAPER
12	---	SUPPORT ACTUATOR L/P
13	50415001	SENSOR PHOTO :FACE CONTROL,LOW PAPER
14	56735101	HARNESS ASSY N/SNSR (J66-J661,J662)
15	---	
16	---	
17	---	ROLL 7
18	---	COVER FEEDER
19	50226501	FEEDER ASSY (with 20~29)
20	---	SHAFT FEED
21	---	BEARING
22	---	SUPPORT ASSY NUDGER
23	---	CLUTCH NUDGER
24	---	CLUTCH GEAR
25	---	CLUTCH ASSY O/W
26	---	ROLL ASSY
27	---	GEAR 25T
28	---	GEAR 31T
29	---	SPRING NUDGER
30	---	GEAR 4
31	---	GEAR 2
32	---	COVER GEAR
33	---	BRACKET
34	---	GEAR 3
35	---	GEAR 1
36	50226801	PWBA FEEDER
37	51401401	CLUTCH ASSY FEED
38	---	BEARING
39	---	HARNESS ASSY N/MOT (J67-J671)
40	---	SOCKET
41	---	SUPPORT ROLL-7
42	---	CHUTE TURN
43	---	STOPPER CST
44	---	CLAMP
96	58262501	KIT SOCKET & HARNESS (39, 40) (same as)
97	58262601	KIT ACTUATOR & SUPPORT (11, 12)
98	58261801	KIT FEEDER ASSY (1~40)
99	58261701	KIT ROLL FEED (qty. 3 of item 26)

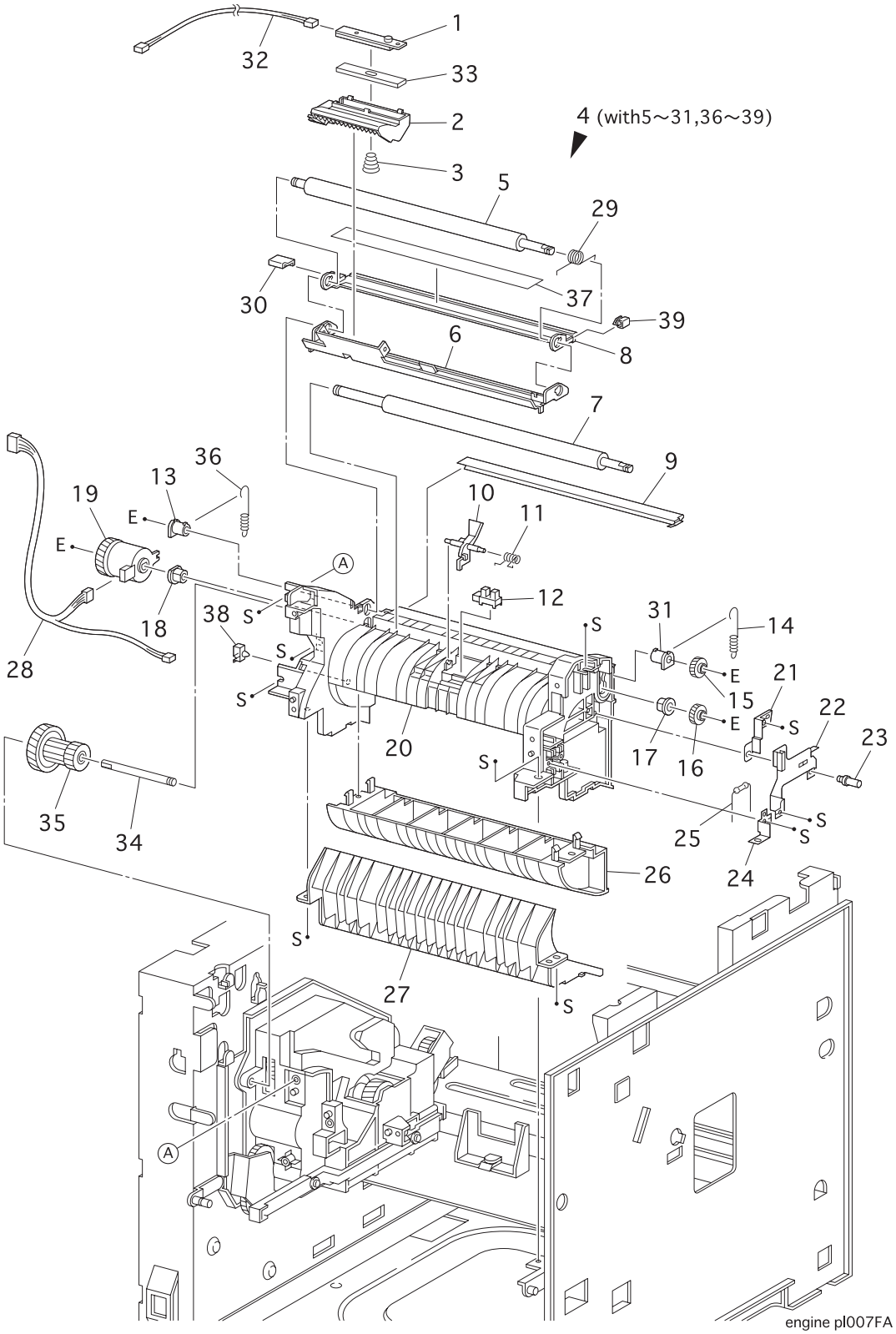
PL4.1 Chute MBF



PL4.1 Chute MBF

ITEM	PART NUMBER	PART NAME
1	50226601	CHUTE MBF ASSY (with 2~31)
2	---	ROLL ASSY MBF (with 3~6,28)
3	---	SHAFT ASSY MBF
4	---	CAM PICK UP MBF
5	---	CORE
6	50418801	ROLL ASSY MBF
7	---	BEARING
8	---	TRAY BOTTOM ASSY (with 11,12)
9	---	
10	---	
11	---	TRAY BOTTOM
12	53352301	ACTUATOR N/P MBF
13	---	SPRING TRAY BOTTOM MBF
14	---	BEARING EXIT
15	50518001	PAD ASSY RETARD
16	---	
17	---	
18	---	
19	---	SENSOR PHOTO :PAPER SET
20	---	PLATE EARTH MBF
21	---	CHUTE ASSY MBF
22	---	
23	56517201	SOLENOID PICK UP
24	50934101	SPRING MBF
25	51243301	GEAR PICK UP
26	---	PLATE ENV CONECTOR
27	56736601	CONECTOR ASSY ENV
28	---	CAM PICK UP MBF (LEFT)
29	56735201	HARNESS ASSY MBF NOPAP (J45-J451)
30	---	PLATE ENV ASSY (with 26,27) . . . . .
31	50518101	PAD ASSY PICK UP
32	---	GUIDE ROLL

PL5.1 P/H Assy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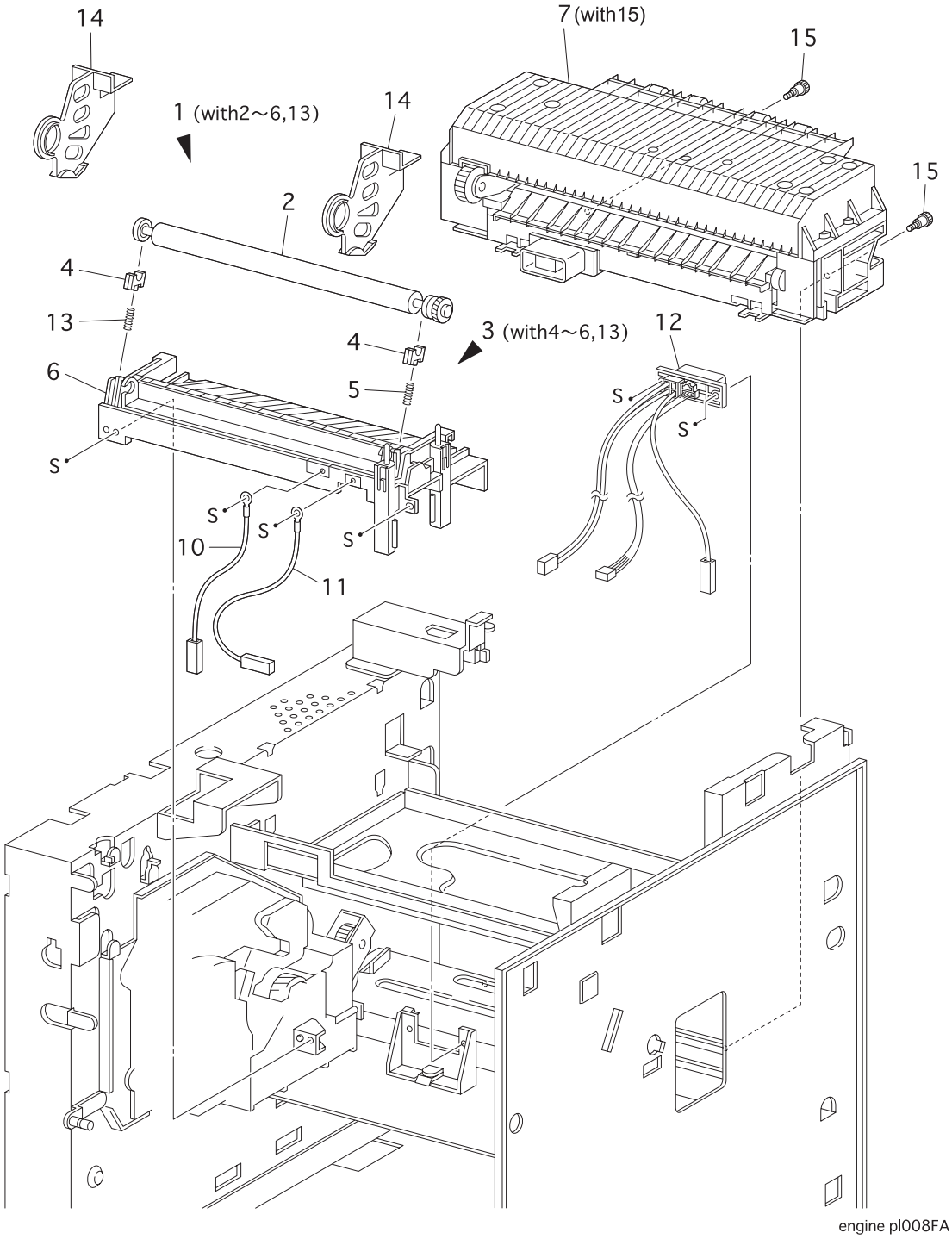
PL5.1 P/H Assy

ITEM	PART NUMBER	PART NAME
1	---	TONER SENSOR
2	---	HOLDER TONER SENSOR
3	---	SPRING TONER SENSOR
4	50226101	P/H ASSY (with 2,5~31,36~39)
5	---	ROLL REGI METAL
6	---	CHUTE UPPER ASSY
7	51712801	ROLL REGI RUBBER
8	---	CHUTE INLET
9	---	SPRING EARTH BOTTOM
10	53352401	ACTUATOR REGI
11	50934201	SPRING SENSOR REGI
12	50415001	SENSOR PHOTO :REGI
13	---	BEARING METAL
14	50934301	SPRING REGI
15	51243401	GEAR REGI METAL
16	51243501	GEAR REGI RUBBER
17	---	BEARING RUBBER R
18	---	BEARING RUBBER L
19	51401901	CLUTCH REGI
20	---	CHUTE BOTTOM UPPER
21	---	SPRING EARTH RIGHT
22	---	SPRING EARTH CENTER
23	---	SCREW EARTH
24	---	SPRING LEFT
25	---	RESISTOR
26	---	CHUTE BOTTOM LOWER
27	---	CHUTE CST
28	56735301	HARNESS ASSY REGI (J43-J432,J433)
29	---	SPRING TORSION
30	---	HANDLE LEVER
31	---	BEARING METAL R
32	---	HARNESS ASSY TONER SENSOR (J42-J421)
33	---	CUSHION TNS
34	51115001	SHAFT 14
35	51243601	GEAR 14
36	50934401	SPRING REGI L
37	---	LABEL INLET
38	---	CLAMP
39	---	CAP INLET
99	58261901	KIT TONER SENSOR (with 1~3, 32, 33)

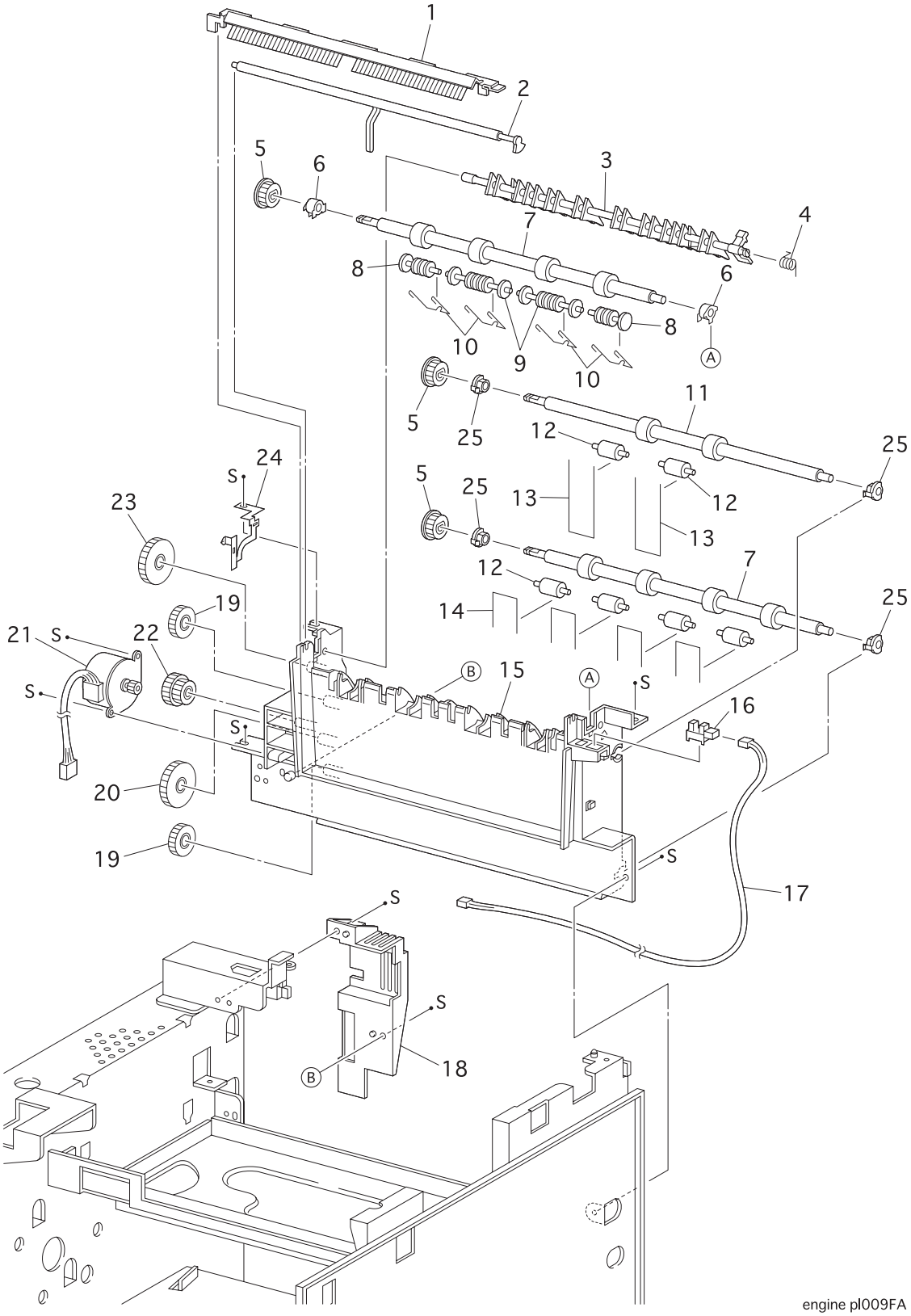
PL6.1 Chute Trans & Fuser



PL6.1 Chute Trans & Fuser

ITEM	PART NUMBER	PART NAME
1	---	BTR CHUTE ASSY (with 2~6,13)
2	50226701	BTR ASSY
3	53352701	CHUTE TRANS ASSY (with 4~6,13)
4	---	BEARING BTR SUP
5	---	SPRING BTR
6	---	CHUTE TRANS (REFERENCE ONLY)
7	50226301	120V FUSER ASSY (with 15)
--	50226401	220V FUSER ASSY (with 15)
8	---	
9	---	
10	---	WIRE ASSY DTS
11	---	WIRE ASSY TR
12	56736401	120V HARNESS ASSY FUSER-M (J271,J11,J27,J262)
--	56736501	220V HARNESS ASSY FUSER-M (J271,J11,J27,J262)
13	---	SPRING BTR L
14	---	HOLDER BTR
15	---	THUMB SCREW

PL7.1 Exit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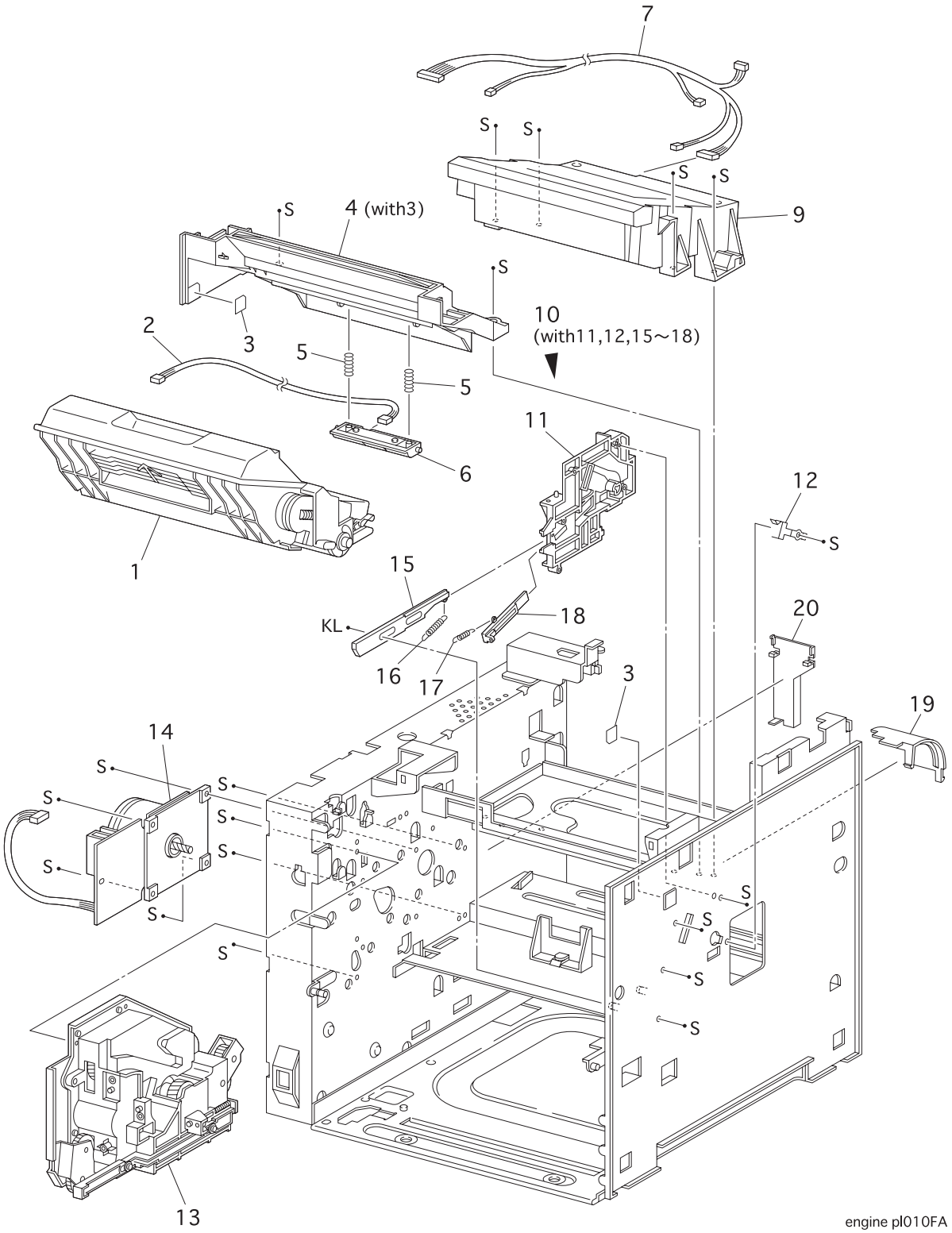
PL7.1 Exit

ITEM	PART NUMBER	PART NAME
1	50227101	ELIMINATOR ASSY EXIT
2	53352501	ACTUATOR FULL STACK
3	---	GATE EXIT
4	---	SPRING EXIT
5	---	GEAR EXIT-17
6	---	BEARING EXIT
7	50415101	ROLL ASSY MID-1
8	---	ROLL PINCH EXIT OUT
9	---	ROLL PINCH EXIT
10	---	SPRING PINCH EXIT
11	50415201	ROLL ASSY MID-2
12	---	ROLL PINCH
13	---	SPRING PINCH MID
14	---	SPRING PINCH
15	---	CHUTE EXIT
16	50415001	SENSOR PHOTO :EXIT
17	56736701	HARNESS ASSY FS SNR (J31-J311)
18	---	COVER INTERLOCK
19	---	GEAR EXIT-23
20	---	GEAR EXIT-33
21	56517901	MOTOR ASSY EXIT
22	---	GEAR EXIT-17/47
23	---	GEAR EXIT-32
24	---	SPRING EARTH EXIT
25	---	BEARING MID
98	58262001	KIT BEARING (qty. 6 of item 6)
99	53352801	CHUTE EXIT ASSY (with 1~17, 19~24)

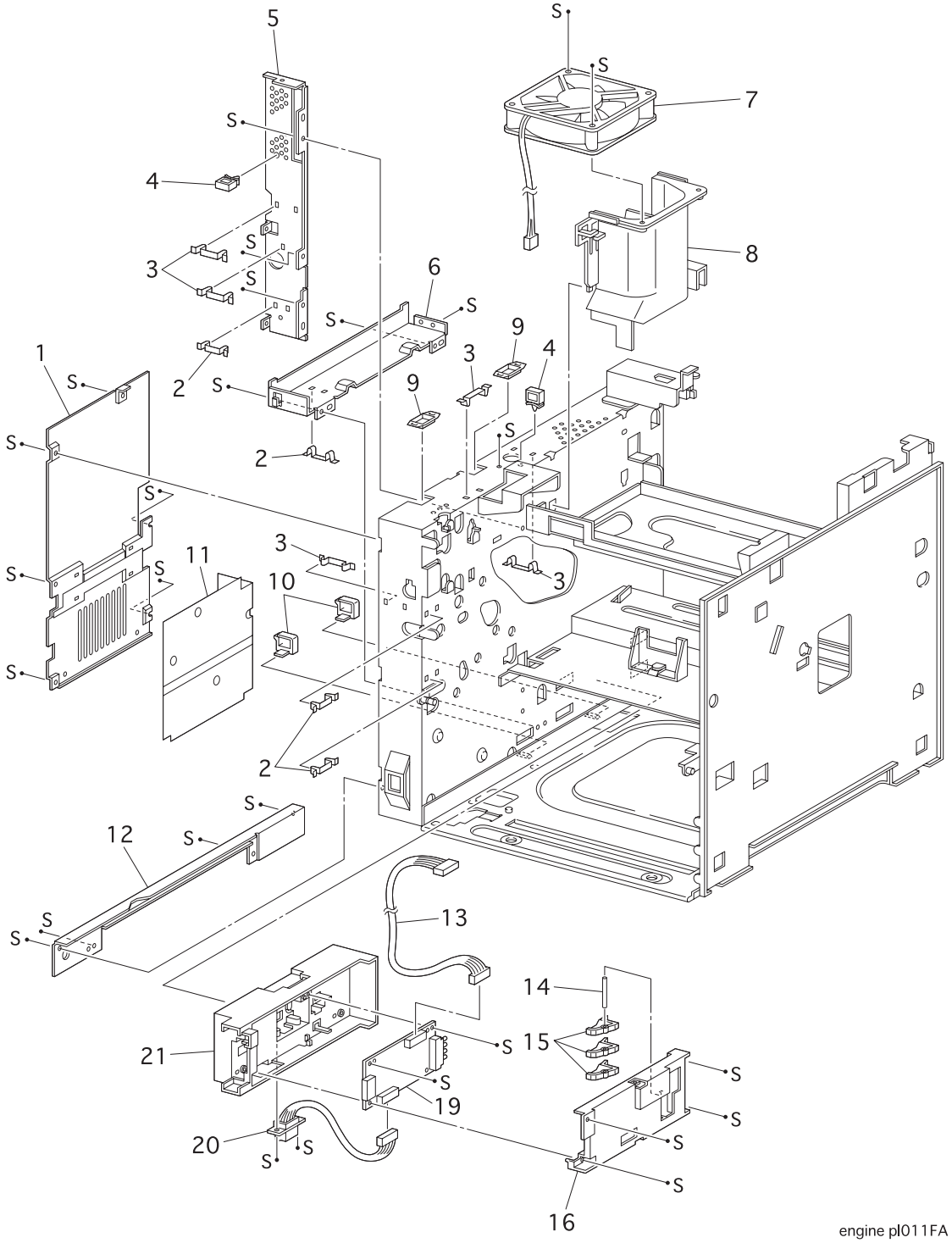
PL8.1 Drive & Xerographics



PL8.1 Drive & Xerographics

ITEM	PART NUMBER	PART NAME
1	---	CRU
2	---	HARNESS ASSY CRU SNS (J25-J251)
3	---	LABEL ARROW
4	50227001	CRU TOP GUIDE ASSY (with 3)
5	---	SPRING
6	---	SENSOR ASSY CRU
7	56735401	HARNESS ASSY ROS (J21,J22-J211,J212,J213,J223)
8	---	
9	50226201	ROS ASSY
10	---	CRU SIDE GUIDE ASSY-R (with 11,12,15~18)
11	---	CRU SIDE GUIDE
12	---	SPRING CLIP
13	51243701	GEAR ASSY DRIVE
14	56517501	MOTOR ASSY MAIN
15	---	ARM GUIDE A
16	---	SPRING GUIDE A
17	---	SPRING GUIDE B
18	---	ARM GUIDE B
19	---	DUCT ROS
20	---	DUCT FUSER
99	---	KIT SENSOR CRU

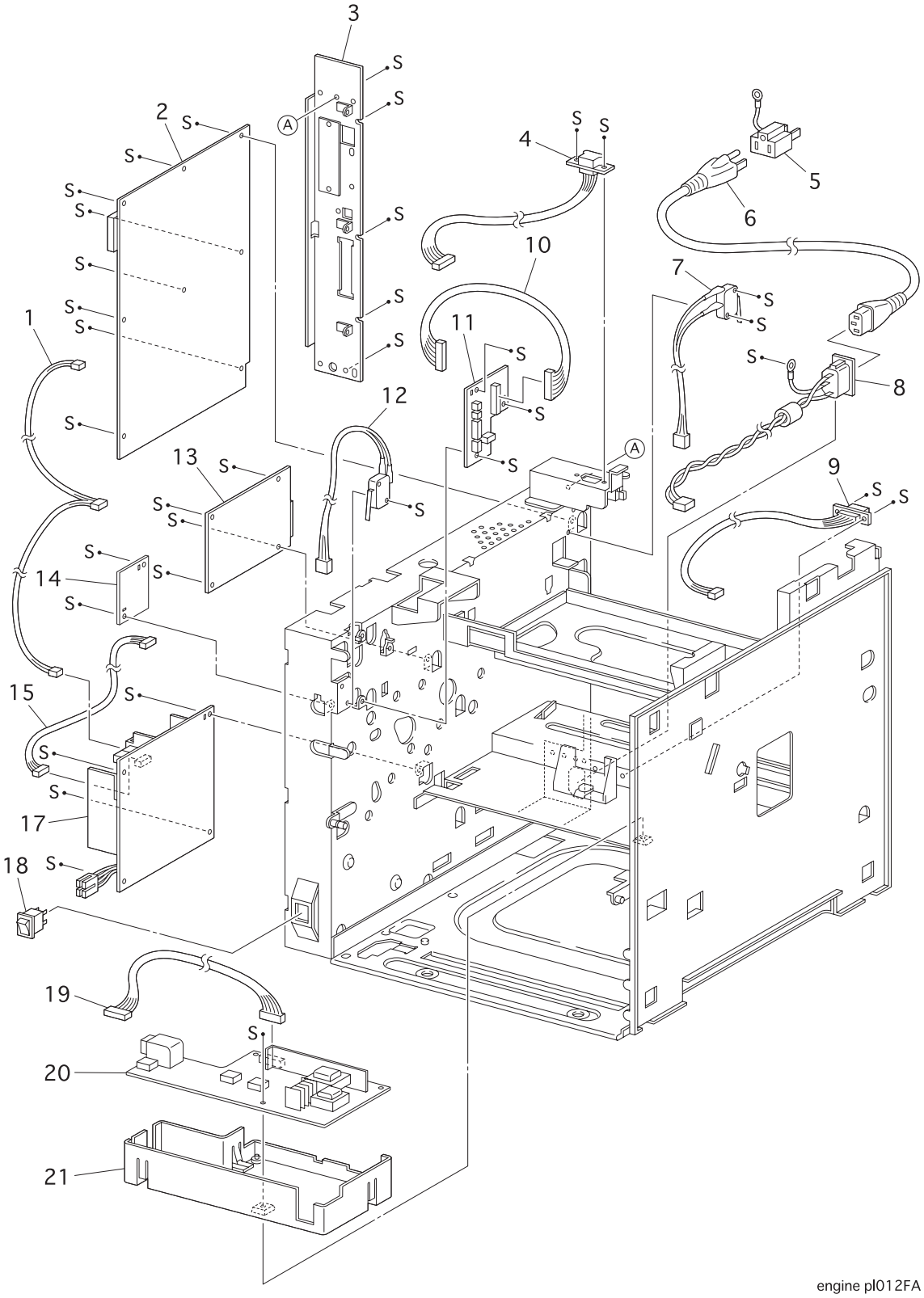
PL9.1 Frame & Size Sensor



PL9.1 Frame & Size Sensor

ITEM	PART NUMBER	PART NAME
1	---	PLATE ASSY LEFT
2	---	CLAMP PRESS
3	---	CLAMP PRESS L
4	---	CLAMP I/F
5	---	ELEC BOX LOWER B
6	---	ELEC BOX LOWER A
7	56517701	FAN ASSY
8	---	DUCT FAN
9	---	EDGE SADDLE H
10	---	CLAMP AC
11	---	PLATE INSULATOR
12	---	PLATE HANDLE
13	56735501	HARNESS ASSY FEEDER (J33-J331)
14	---	SHAFT CAM
15	---	CAM SW
16	---	COVER SIZE SENSOR
17	---	
18	---	
19	55086001	PWBA SIZE 1
20	56735601	HARNESS ASSY SIZE M (J51-P511)
21	---	HOUSING SIZE SENSOR
22	---	
99	58262101	KIT SIZE SENSOR 1

PL10.1 Electrical



PL10.1 Electrical

ITEM	PART NUMBER	PART NAME
1	56735701	HARNESS ASSY ESS (J287-J282,J288)
2	---	PWB ESS
3	50130001	PANEL BACK ASSY
4	56735801	HARNESS ASSY OCT-M (J35-P202)
5	---	ADAPTER
6	---	POWER CORD
7	56214001	SWITCH ASSY I/L REAR
8	---	WIRE ASSY AC (J285)
9	56735901	HARNESS ASSY DUP-M (J34-P341)
10	56736001	HARNESS ASSY CONN (J23-J231)
11	55086101	PWBA CONN
12	56214101	SWITCH ASSY I/L FRONT
13	55086201	PWBA HKBMCU
14	55086301	PWBA HKB 5VDC
15	56736101	HARNESS ASSY LVPS (J28-J281)
16	---	
17	55086401	PWBA HKB LVPS-120
	55086501	PWBA HKB LVPS-230
18	56214201	MAIN SWITCH
19	56736201	HARNESS ASSY HVPS (J26-J261)
20	55086601	PWBA HVPS
21	---	HOUSING HVPS

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Section 13: Principles of Operation Continued

The Print Cycle

There are seven steps in the HAKUBA print cycle. This seven step cycle is repeated for each sheet of paper that is sent through the printer.

The seven steps in the print cycle are:

1. Charge
2. Exposure
3. Development
4. Transfer
5. Discharge
6. Fusing
7. Cleaning

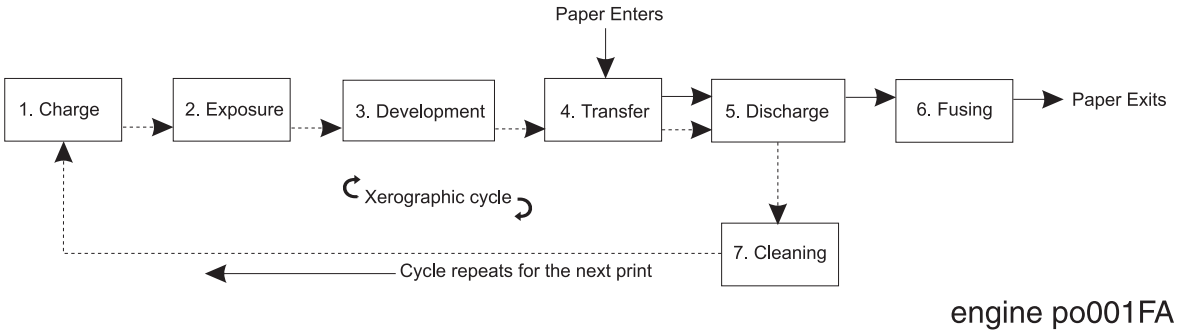

Figure 1. Block Diagram of the print cycle

Figure 1 illustrates the HAKUBA print cycle. It shows the sequence of events for the xerographic process and the paper flow into and out of the printer.

Figure 2, on the following page, is both a cut-away side view of the HAKUBA printer that shows the location of individual components within the printer, and a side view block diagram that shows the major components that are directly related to the print cycle and to the paper path.

The pages following Figure 2 describe in detail each step of the print cycle.

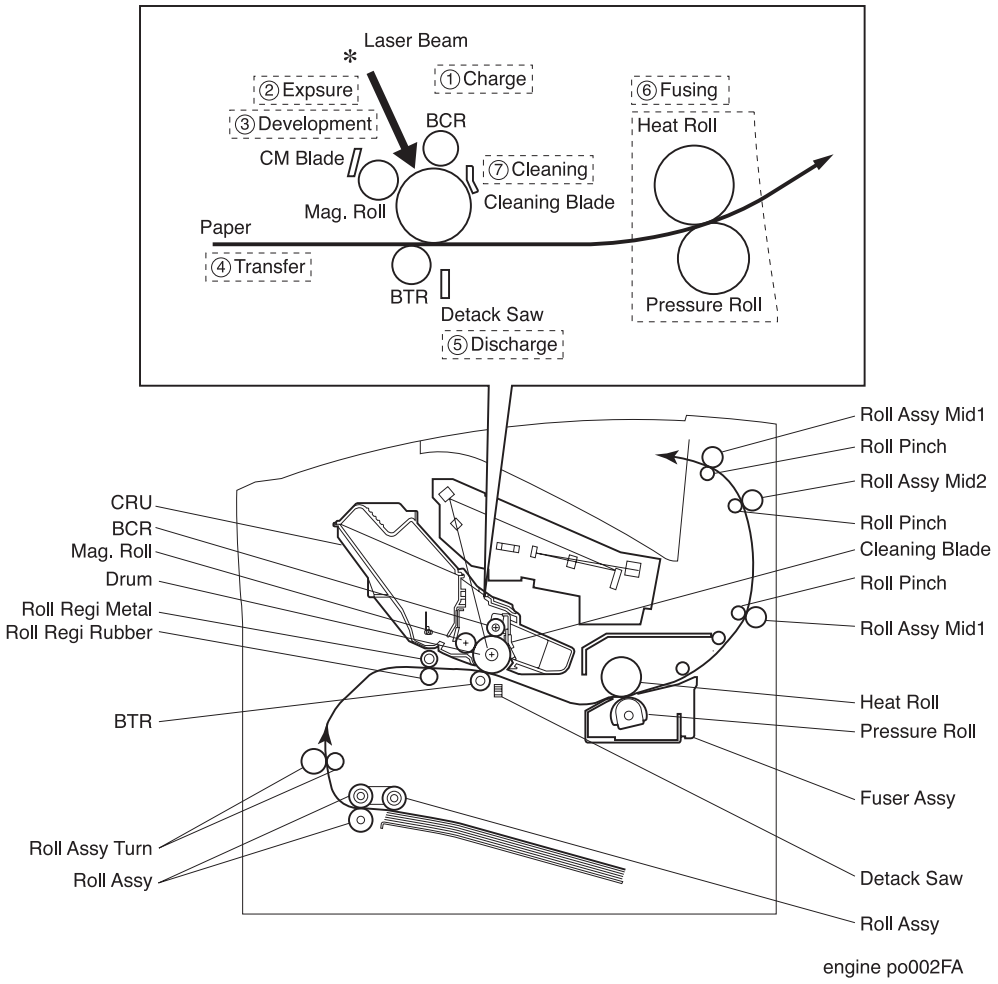

Figure 2. Side view block diagram of the print cycle

1. Charge

The Bias Charge Roll (BCR) places a uniform negative electrostatic charge on the drum surface. The drum surface is made of a photoconductive material that holds the electrical charge as long as the drum remains in darkness. Light striking the drum discharges the surface charge.

The BCR is a conductive roll that is positioned slightly above the surface of the drum. The PWBA HVPS supplies the BCR with two voltages; a negative DC charge voltage and an AC discharge voltage The negative DC voltage creates a uniform negative charge across the surface of the drum. The AC voltage removes any residual DC charge that was left from the previous print cycle.

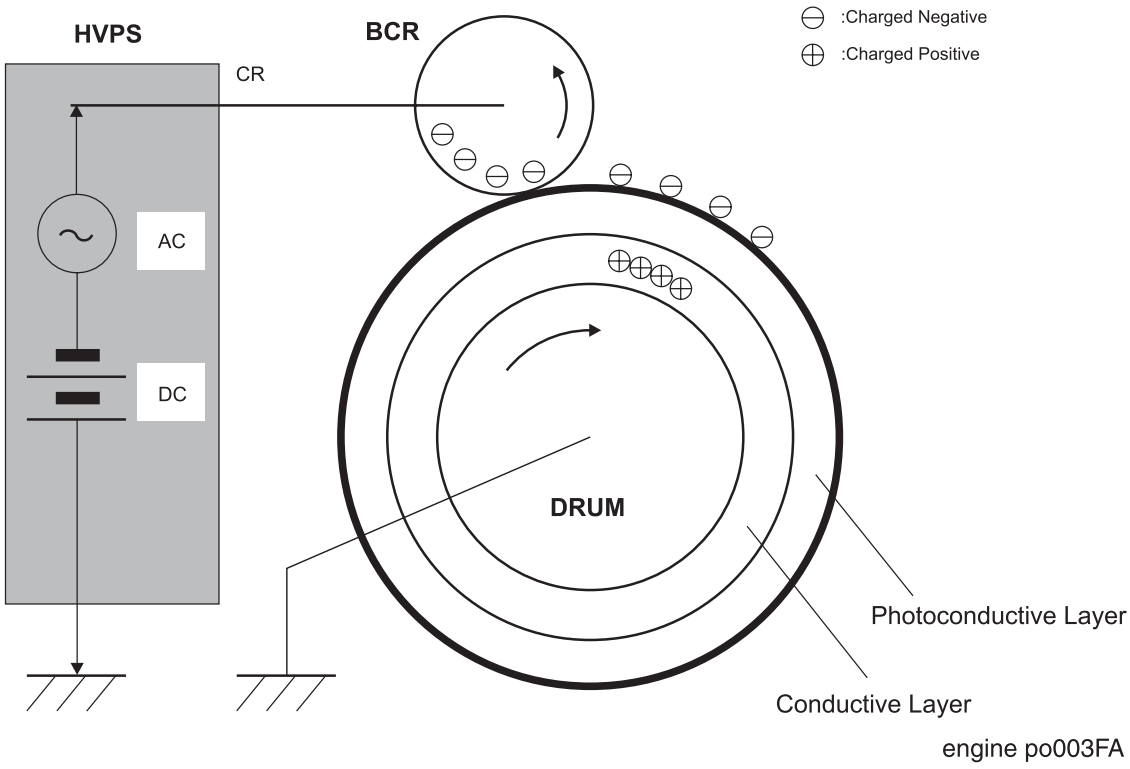

Figure 3. Side view block diagram of the drum charge process

2. Exposure

The Raster Output Scanner (ROS) generates an invisible beam of cohesive light, called a laser beam. Image data received from the print controller modulates this beam, turning it on and off according to image information.

Through the use of a series of rotating and stationary mirrors within the ROS Assy, the beam scans the negative charged drum surface. Whenever the print controller sends a command to print a black pixel, the laser switches on long enough to shine onto the drum at a single pixel point. That point is now discharged and slightly less negative, relative to the surrounding negative charge.

3. Development

The toner in the CRU has a slight magnetic property that causes it to adhere to the Magnetic Roll. The Charge Metering Blade (CM Blade) spreads the toner into a very thin layer on the Magnetic Roll. Friction between the Magnetic Roll and the CM Blade generates a small electrical charge that is transferred to the toner.

The surface of the Magnetic Roll is made up of a thin sheet of conductive material. The PWBA HVPS supplies the Magnetic Roll with two voltages; a negative DC voltage and an AC voltage . The DC voltage is the voltage that is used to transfer toner from the Magnetic Roll to the surface of the drum. The AC voltage agitates the toner on the Magnetic Roll and makes toner transfer easier.

The Magnetic Roll maintains an electrical potential qrelative to the charged surface of the drum. Negative charged areas of the drum have a lower electrical potential, or higher relative negative value, than the Magnetic Roll. Discharged areas of the drum have a higher electrical potential, or lower relative negative value, than the Magnetic Roll. A discharged point on the surface of the drum now appears less negative, or positive, relative to the negative charge on the Magnetic Roll.

The toner adhering to the Magnet Roll is always in contact with the drum surface. When a less negative point on the drum (a discharged area) comes in contact with the more negative charged toner on the Magnet Roll, toner transfers from the Magnet Roll to that point on the drum. At this point there is now a visible toner image on the drum surface.

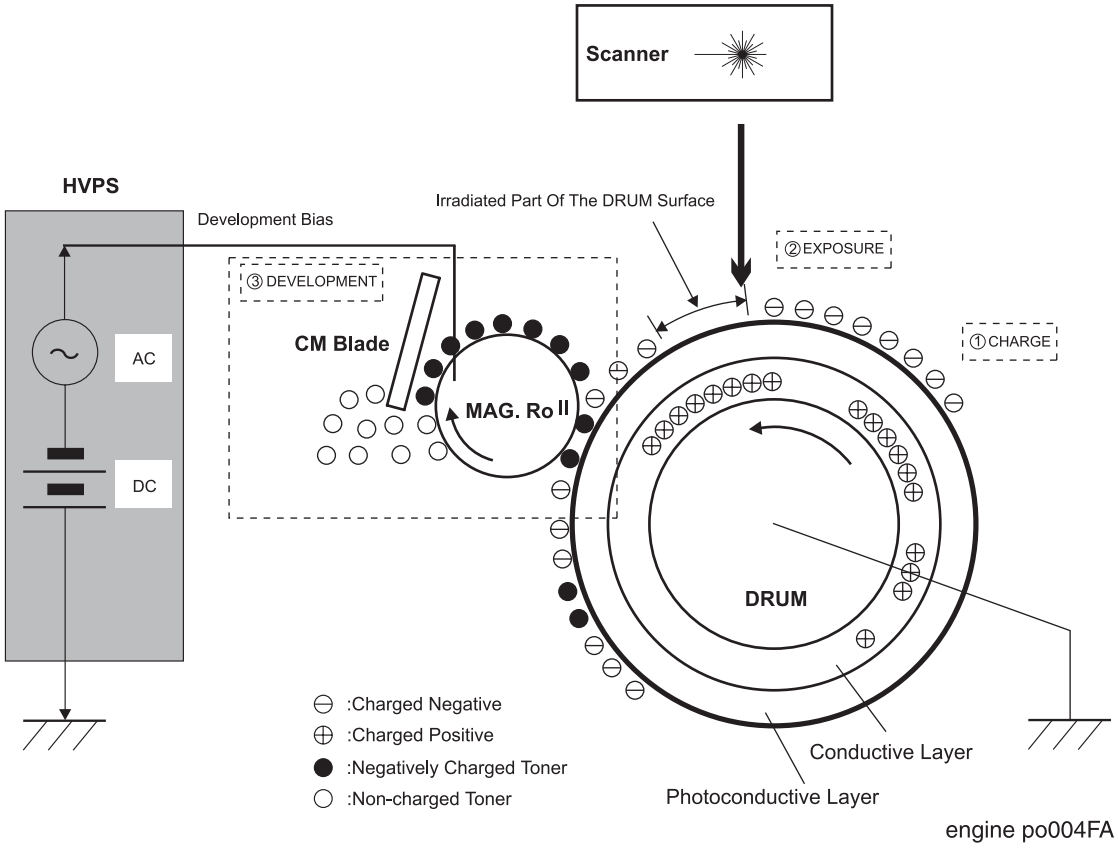

Figure 4. Side view block diagram of the development process

4. Transfer

The Bias Transfer Roll (BTR) applies a positive charge to the back side of the printing paper as the paper travels between the BTR and the drum surface. This positive charge transfers the negative charged toner image from the drum surface to the front of the paper. The toner image is now on the paper and the paper is now stuck to the drum surface due to the relative electrical differences between the negative electrical charge of the inner conductive layer of the drum and the positive electrical charge of the paper.

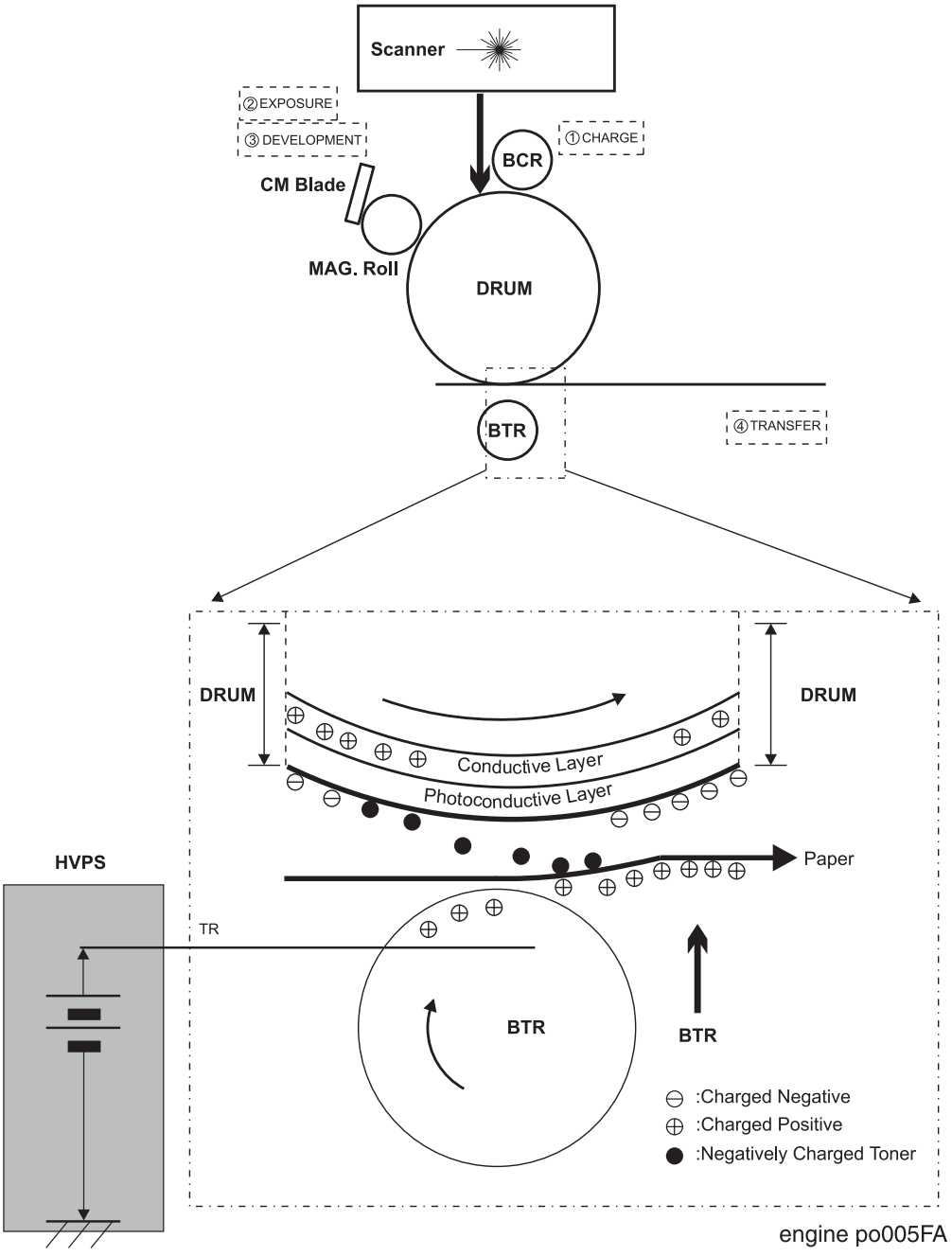

Figure 5. Side view block diagram the transfer process

5. Discharge

After the toner image has transferred to the surface of the paper, the Detack Saw (a thin strip of metal that resembles a saw blade) applies a negative charge to the back side of the paper to neutralize the positive voltage that was applied to it by the BTR. Once the positive voltage is neutralized, the paper strips easily off of the drum surface.

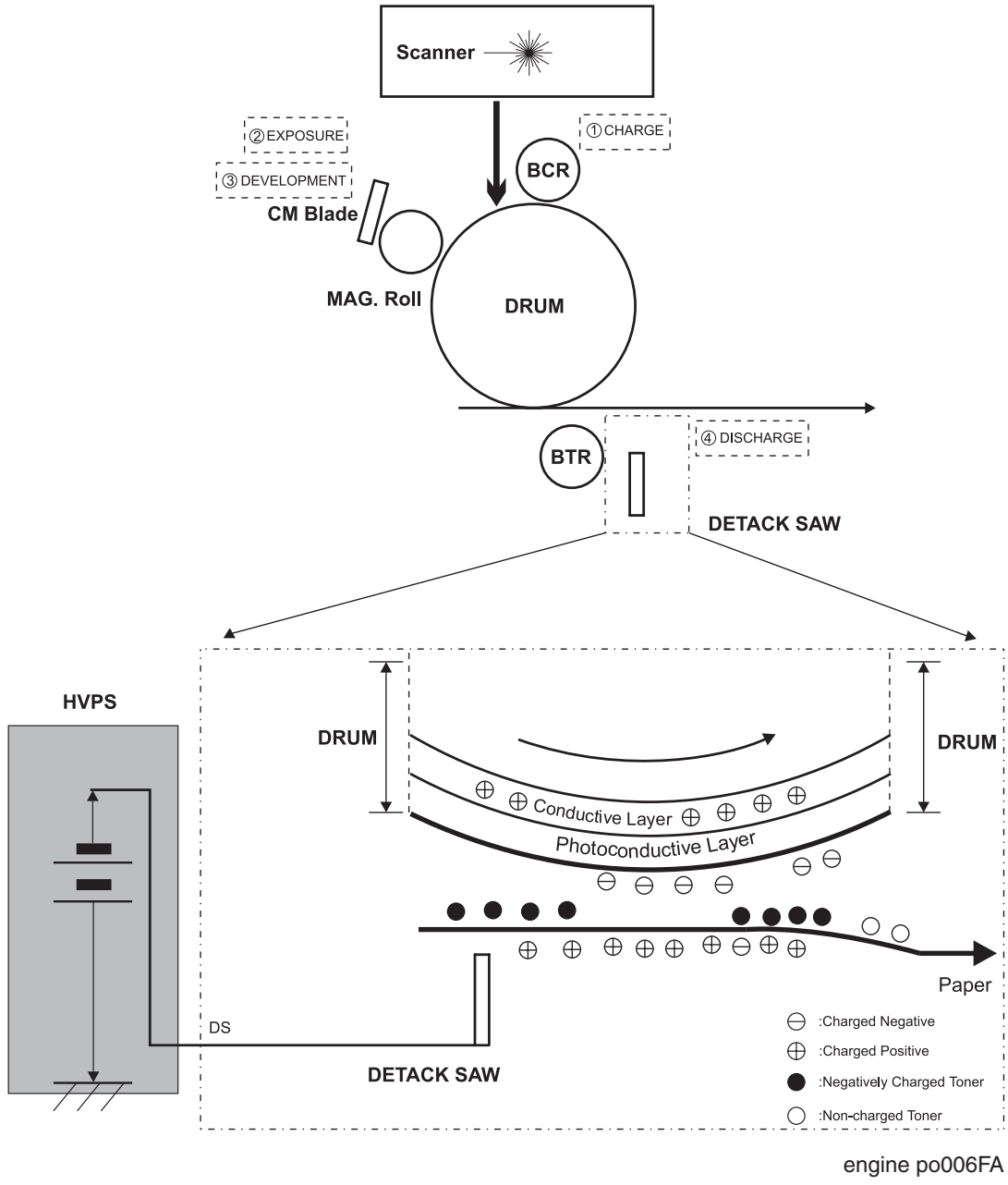

Figure 6. Side view block diagram of the discharge process

6. Fusing

The paper moves to the Fuser Assy where it passes between the Heat Roll and the Pressure Roll. The Heat Roll melts the toner image and bonds it permanently to the paper. The paper then is transported to the output tray.

7. Cleaning

The Cleaning Blade removes any toner that remains on the drum after the transfer process. Immediately after passing the Cleaning Blade, the drum passes under the BCR. The BCR applies an AC voltage to the surface of the drum to neutralize any electrical patterns remaining from the last print cycle.

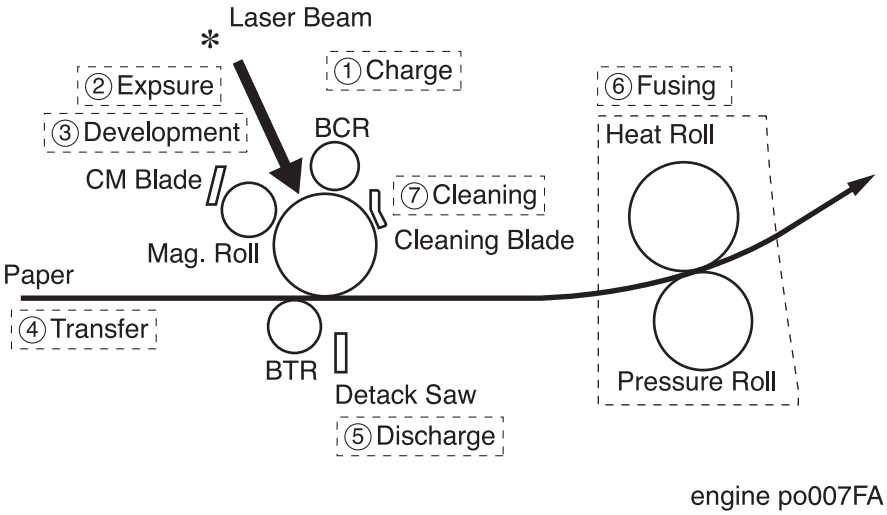

Figure 7. Side view block diagram of the fusing and cleaning processes

The toner that the Cleaning Blade removes is collected inside the CRU. Toner that is reclaimed from the drum is not reused by the CRU.

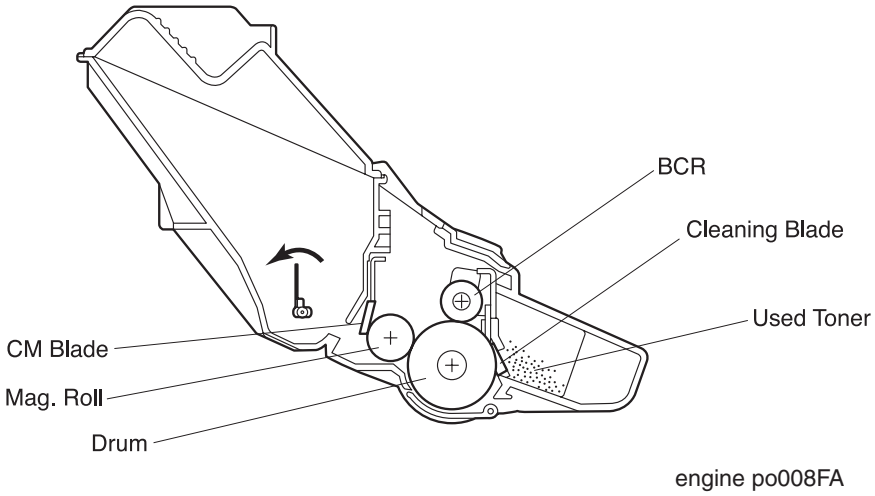

Figure 8. Side view cutaway of the CRU

The Changes in the Electrical Potential of the Drum Surface During the Print Cycle

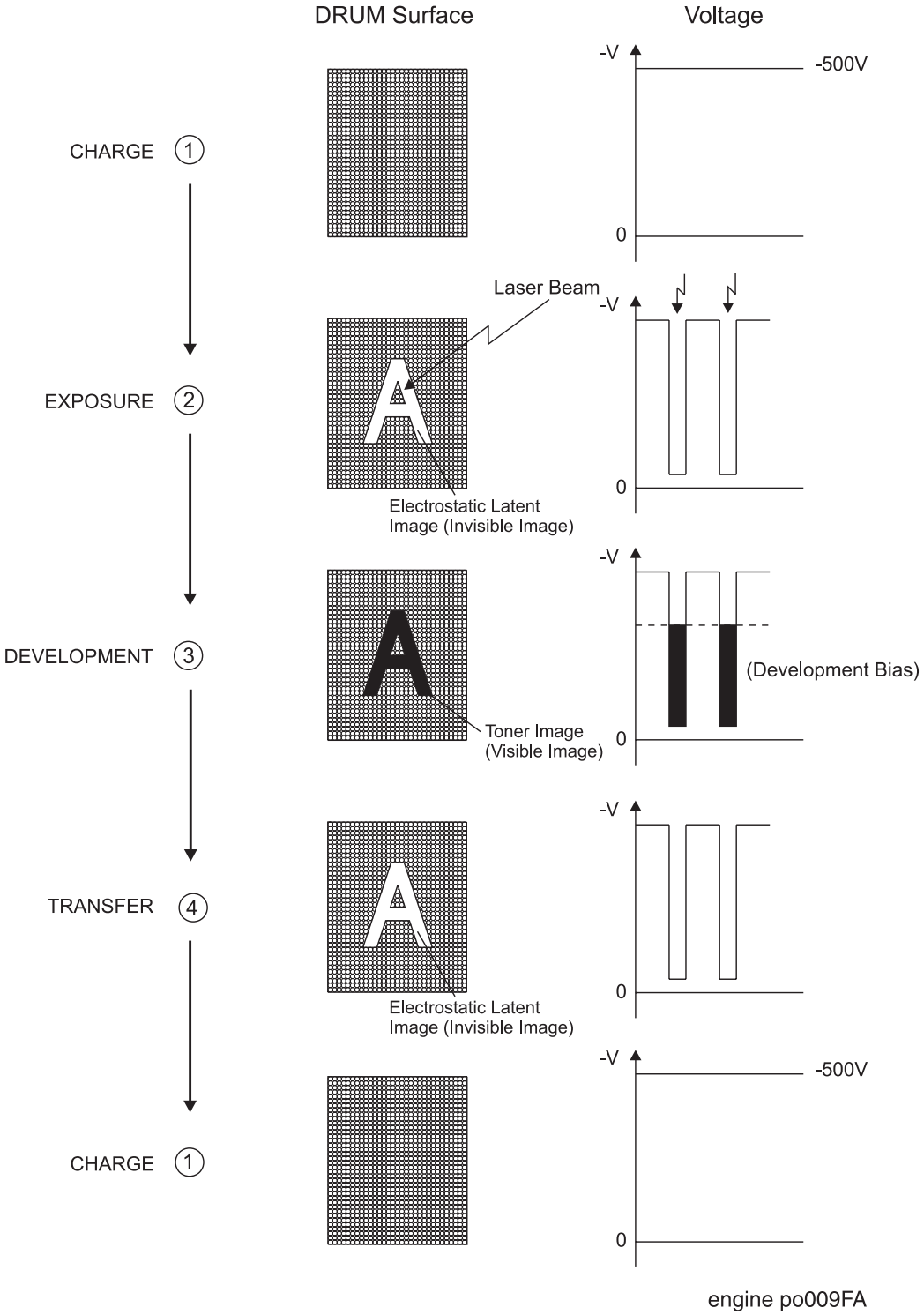

Figure 9. Drum Image and Corresponding Drum Surface Voltages

The Paper Path

There are three paths that a sheet of paper can follow during a print cycle (Figure 10). One path is taken if paper is fed from the paper cassette. Another path is taken if paper is fed from the Multiple-Bypass Feeder (MBF). A third path is taken if paper is fed from the Envelope Feeder Assy option.

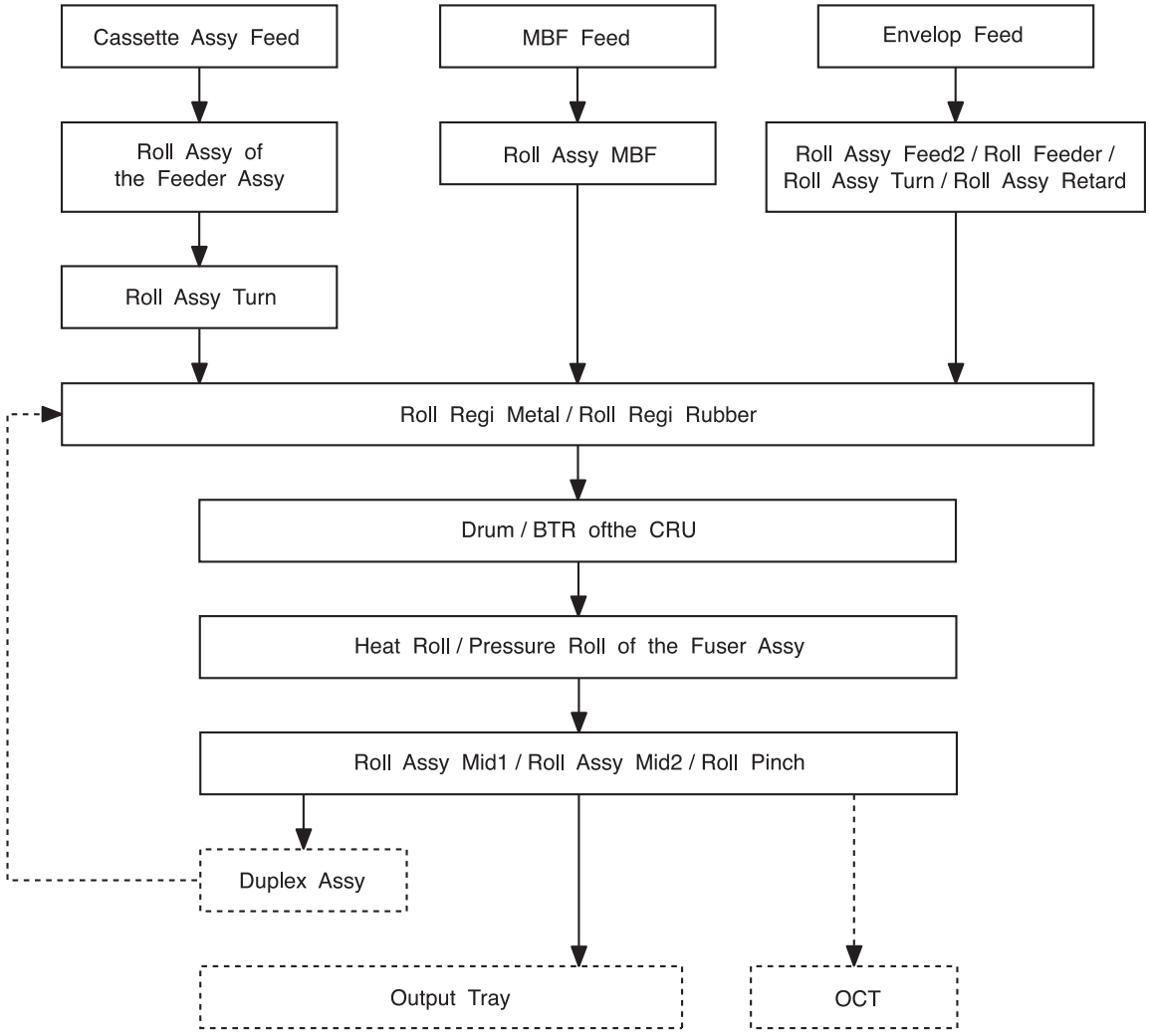
Cassette Assy Feed
MBF Feed
Envelop Feed
Roll Assy of the Feeder Assy
Roll Assy MBF
Roll Assy Feed2 / Roll Feeder / Roll Assy Turn / Roll Assy Retard
Roll Assy Turn
Roll Regi Metal / Roll Regi Rubber
Drum / BTR ofthe CRU
Heat Roll / Pressure Roll of the Fuser Assy
Roll Assy Mid1 / Roll Assy Mid2 / Roll Pinch
Duplex Assy
Output Tray
OCT
engine po010FA

Figure 10. The Four Possible Paper Paths

Figure 11 is a cut-away side view of the HAKUBA printer that shows the major components that are directly related to the paper path.

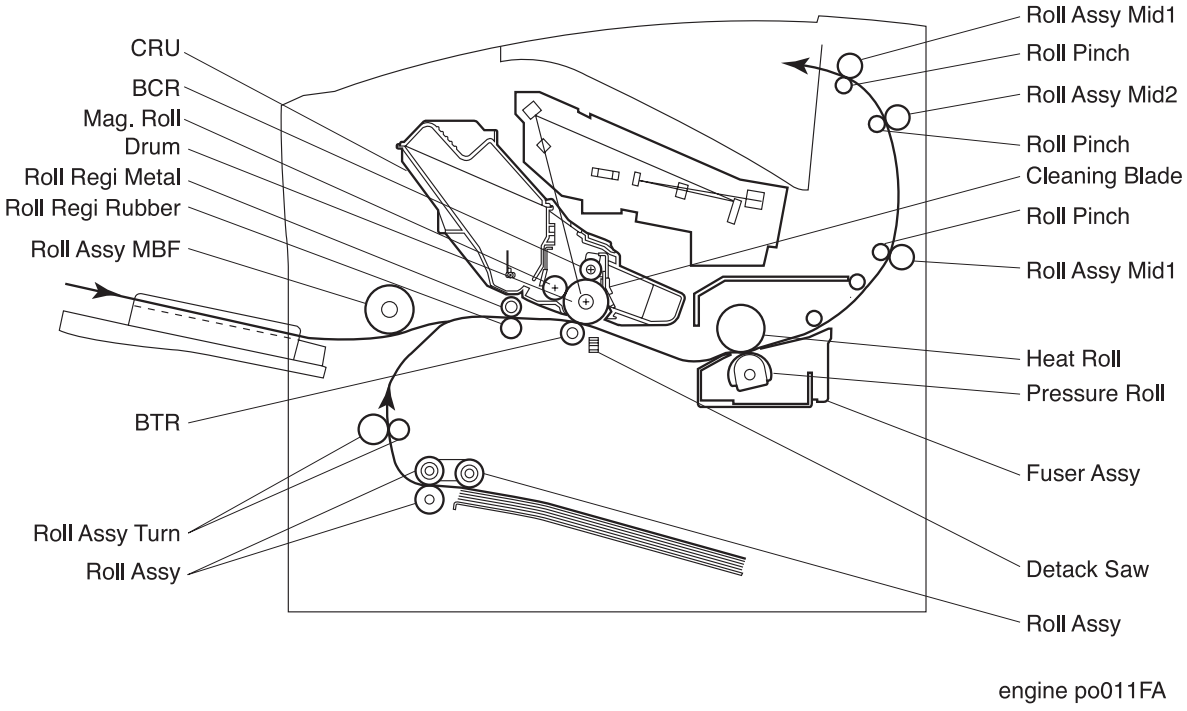

Figure 11. Cut-away side view of the printer showing the paper path.

The Image Path

Figure 12 shows how the printer converts the electronic image sent from your computer into a printed image on a sheet of paper. Figure 13 shows the major components that are directly related to the image path.

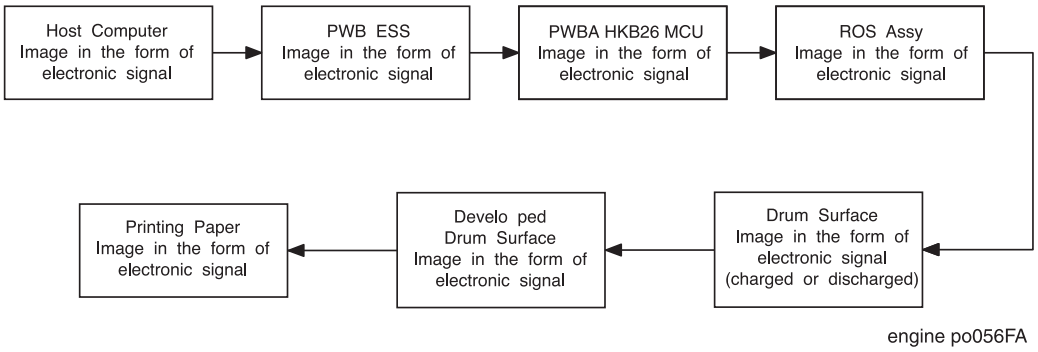
Host Computer
Image in the form of electronic signal
PWB ESS
Image in the form of electronic signal
PWBA HKB26 MCU
Image in the form of electronic signal
ROS Assy
Image in the form of electronic signal
Drum Surface
Image in the form of electronic signal
(charged or discharged)
Develo ped
Drum Surface
Image in the form of electronic signal
Printing Paper
Image in the form of electronic signal
engine po056FA

Figure 12. The image path

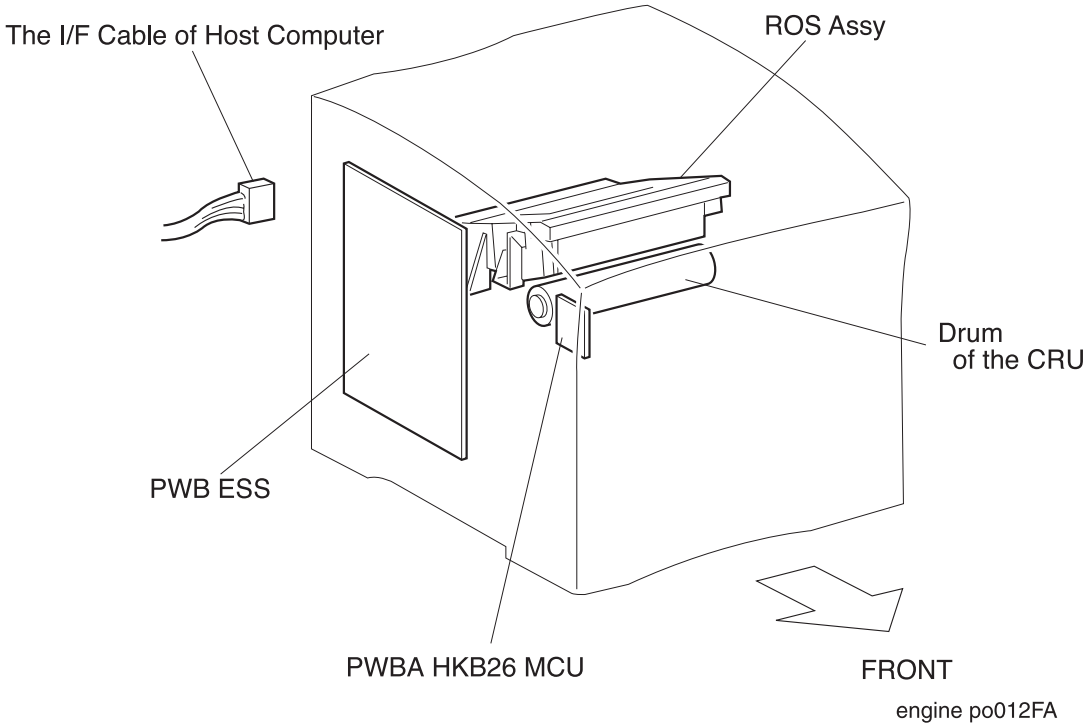

Figure 13. Components directly related to the image path

Drive Flow

As shown in Figure 14, the Gear Assy Drive takes the mechanical energy that is created by the Motor Assy Main and transmits it to four printer subsystems; the Clutch Assy Turn, the drum gear of CRU, the Fuser Assy, Optional Envelope Feeder Assy. The Motor Assy Exit provides the power needed by the exit component. The pages following this figure show each drive section in greater detail.

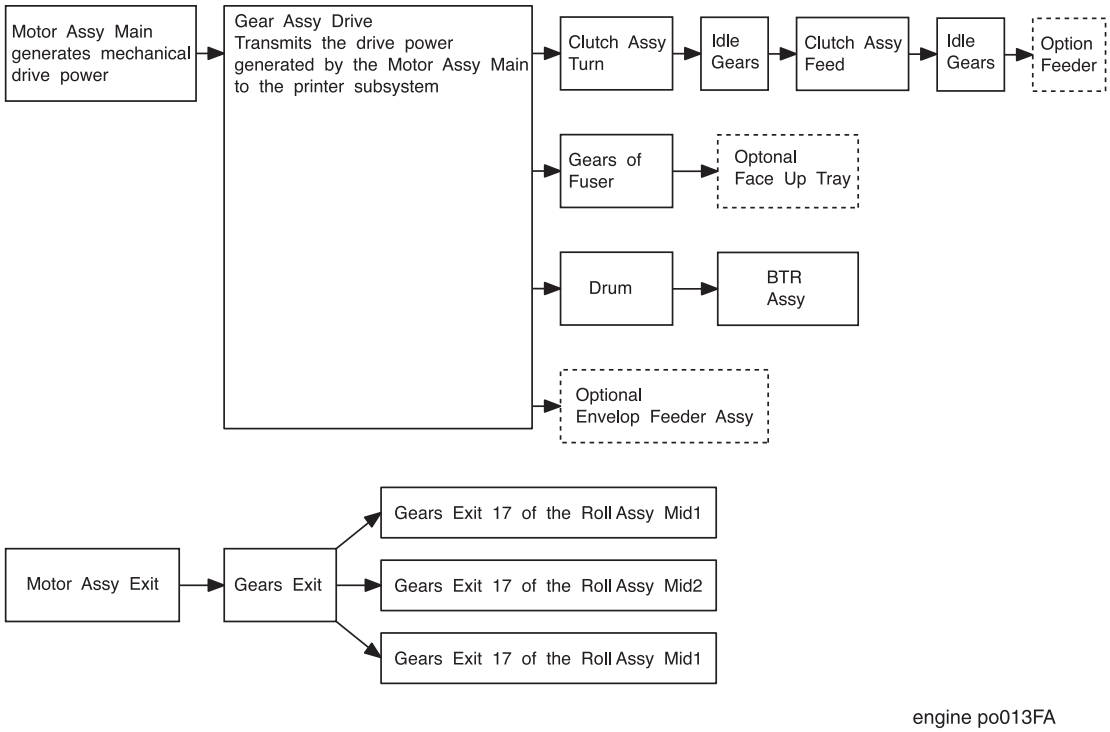

Figure 14. A Block Schematic Diagram of Drive Flow Through the Printer

Drive Transmission to the Roll Assy MBF

As shown in Figure 15, the mechanical energy created by the Motor Assy Main is transmitted through the Gear 14 to the Gear Pick Up that drives the Roll Assy MBF. When the Solenoid Pick Up actuates, it transmits the energy from the Gear 14 to the Gear Pick Up that is located on the end of the Shaft Assy MBF.

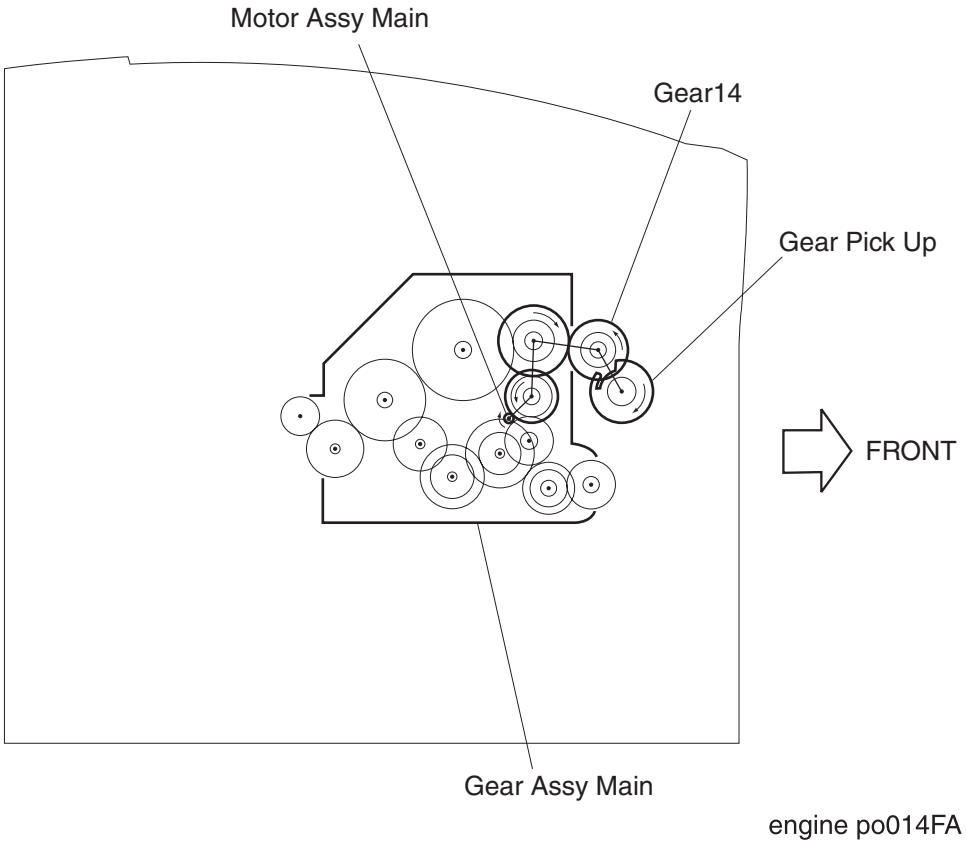

Figure 15. Drive Transmission to the Roll Assy MBF

Drive Transmission to the Roll Assy Turn

As shown in Figure 16, the mechanical energy created by the Motor Assy Main is transmitted through the Gear Assy Drive to the Clutch Assy Turn. When the Clutch Assy Turn actuates, it transmits the energy to the Roll Assy Turn and the Clutch Assy Feed to be described in the next page.

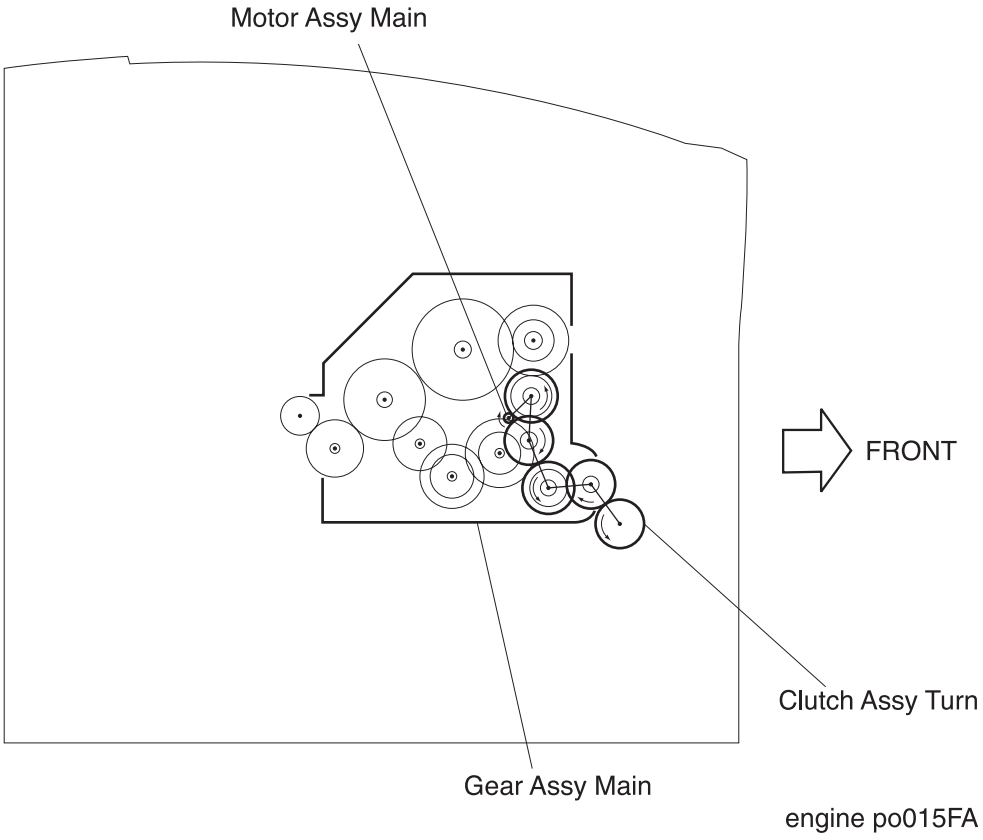

Figure 16. Drive Transmission to the Roll Assy Turn

Drive Transmission to the Feeder Assy

As shown in Figure 17, the mechanical energy created by the Motor Assy Main is transmitted through the Gear Assy Drive, Clutch Assy Turn, idle gears to the Clutch Assy Feed. When the Clutch Assy Turn and the Clutch Assy Feed actuate, it transmits the energy to the Roll Assy of the Feeder Assy.

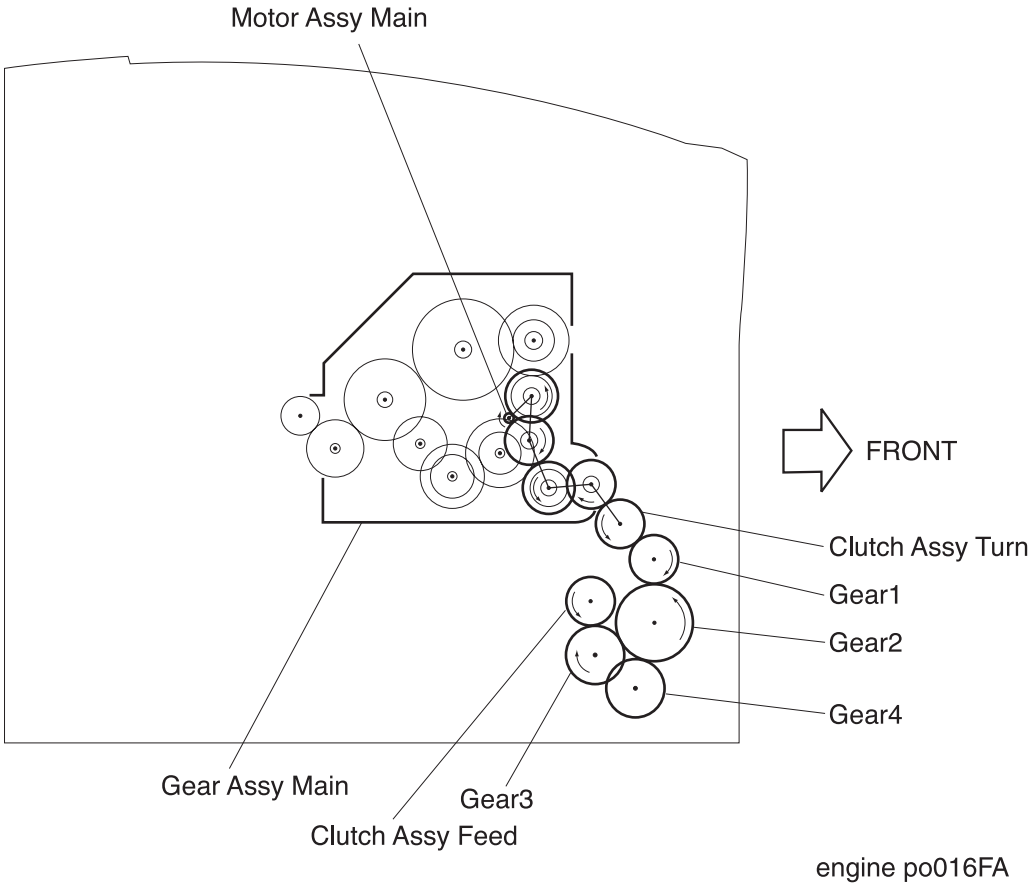

Figure 17. Drive Transmission to the Feeder Assy

Drive Transmission to the Roll Regi Rubber

As shown Figure 18, the mechanical energy created by the Motor Assy Main is transmitted through the Gear Assy Drive to the Clutch Regi that is located on the end of the Roll Regi Rubber.

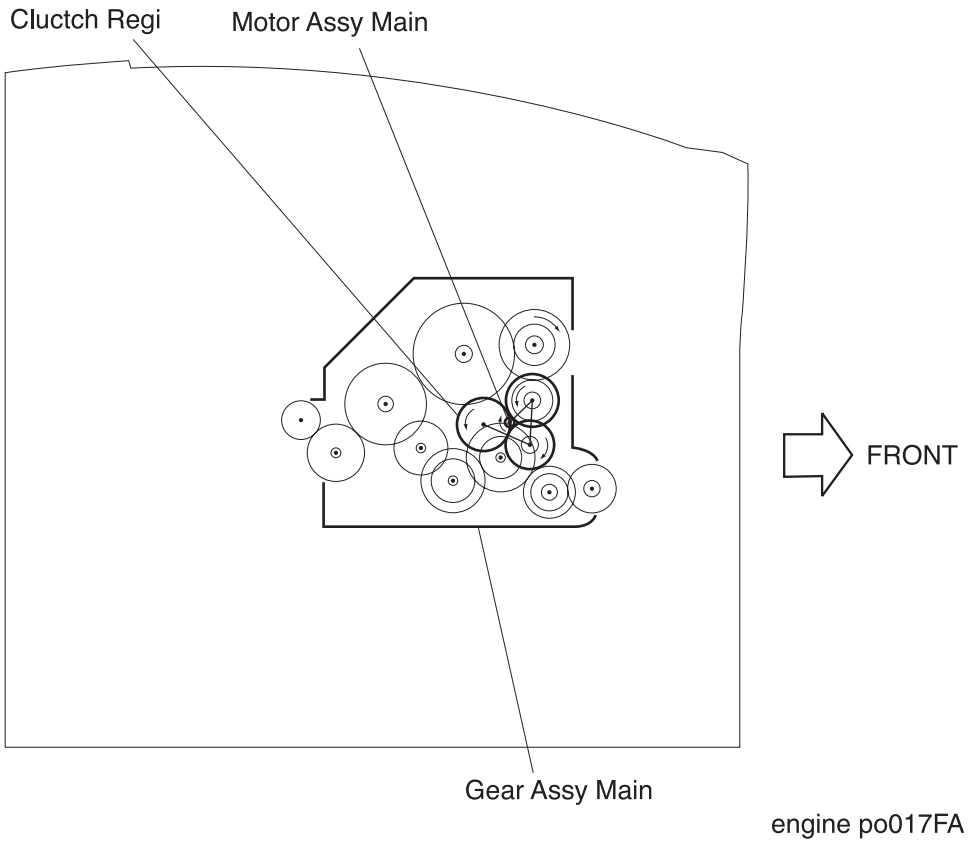

Figure 18. Drive Transmission to the Roll Regi Rubber

Drive Transmission to the Drum and the BTR

the Motor Assy Main is transmitted through the Gear Assy Drive to the Drum drive gear that is located on the end of the Drum. The Drum drives the Gear BTR that is located on the end of the BTR Assy.

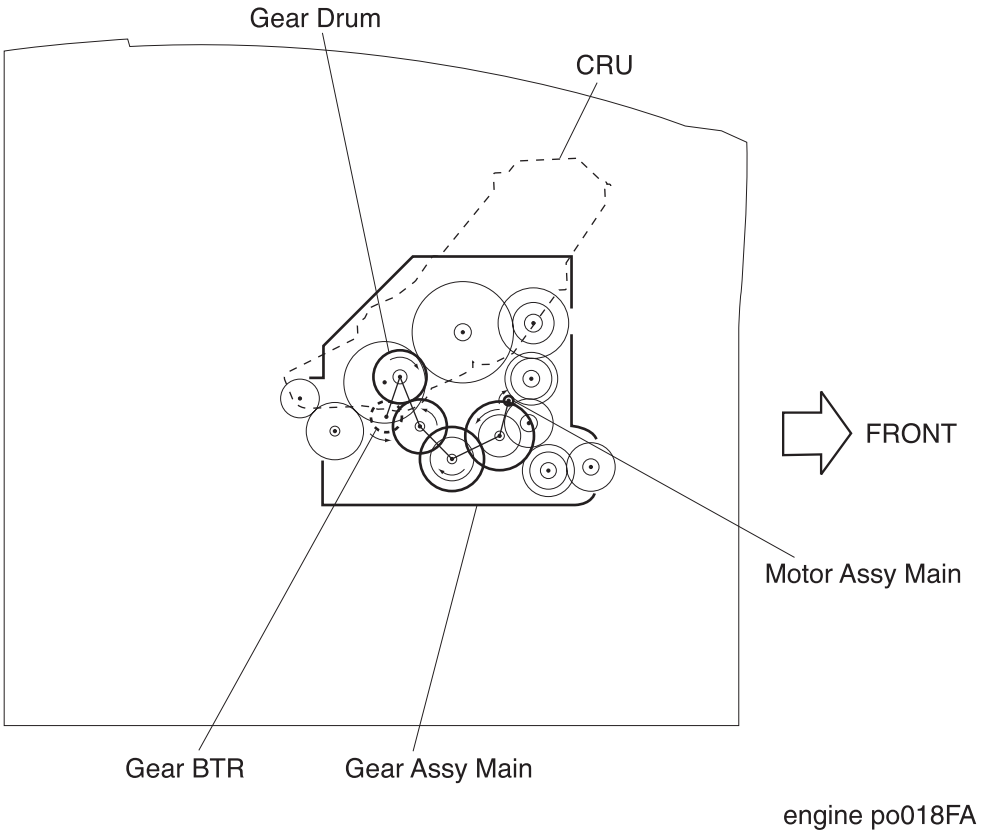

Figure 19. Drive Transmission to the Drum and BTR

Drive Transmission to the Fuser Assy

As shown in Figure 20, the mechanical energy created by the Motor Assy Main is transmitted through the Gear Assy Drive to the Gear Idler of the Fuser Assy. The Gear Idler transmits energy to the Gear H/R located on the Heat Roll, which transmits energy to the Gear Decurl Roll.

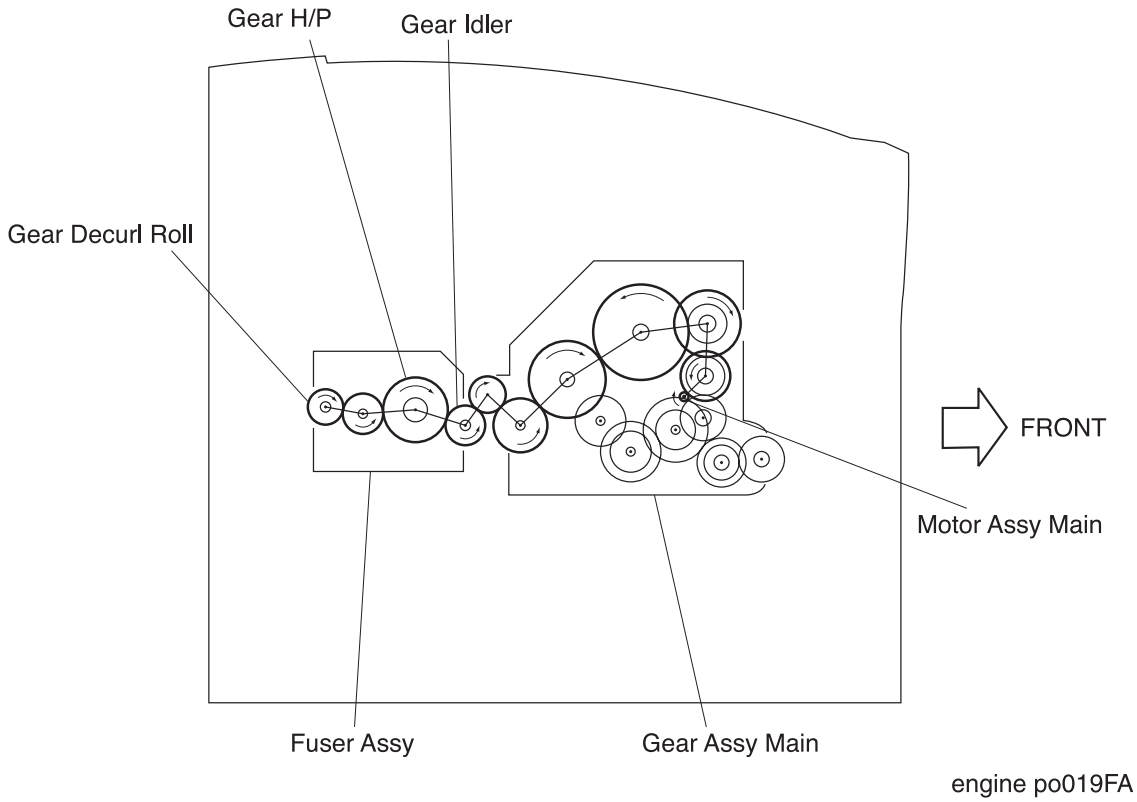

Figure 20. Drive Transmission to the Fuser Assy

Drive Transmission to the Exit components

As shown in Figure 21, the mechanical energy created by the Motor Assy Exit is transmitted through a small gears to the three Gears (Gear Exit 17). Those Gears are located on the Roll Assy Mid-1 (upper and lower) and the Roll Assy Mid-2 respectively.

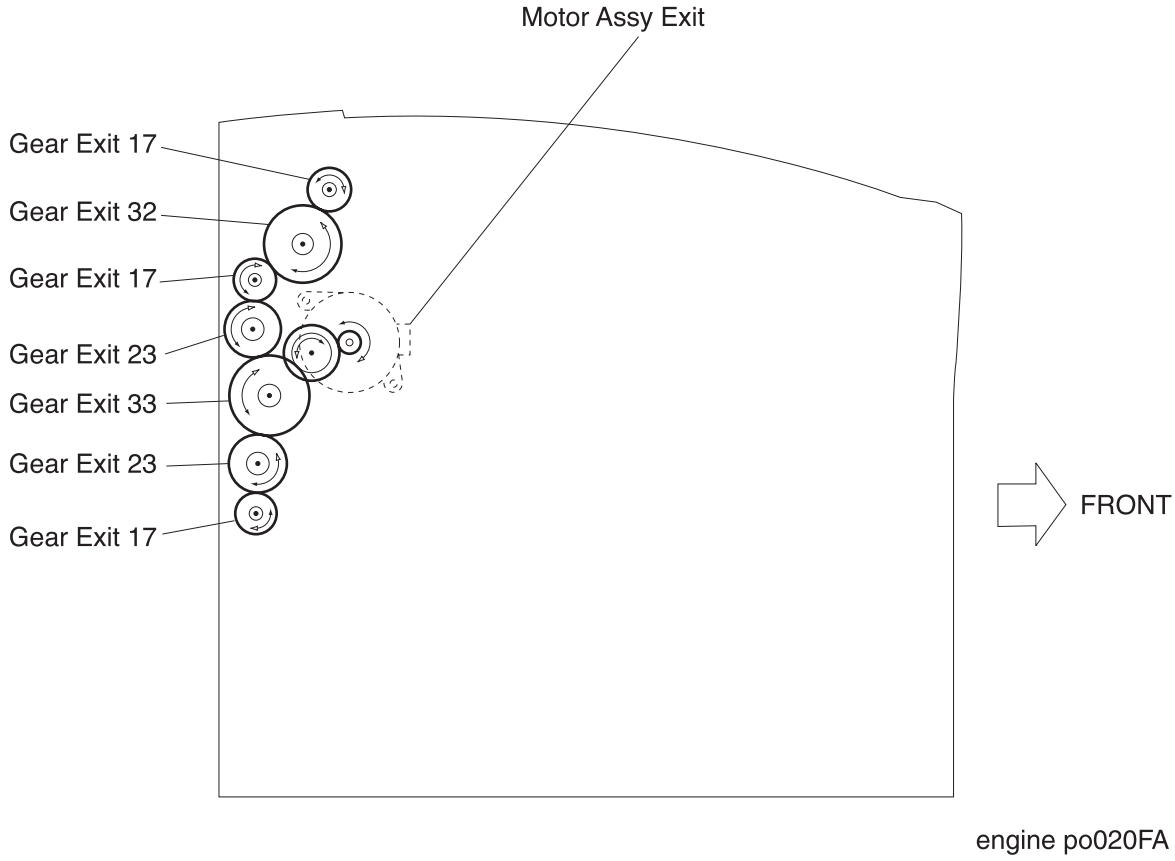

Figure 21. Drive Transmission to the Exit Components

HAKUBA Main Component Function

The following sections describe the function of the major components of the HAKUBA Laser Printer.

1- Covers (PL1)
2- Paper Cassette (PL2)
3- Paper Feeder (PL3)
4- Chute MBF (PL4)
5- P/H Assy (PL5)
6- Chute Trans & Fuser (PL6)
7- Exit (PL7)
8- Drive & Xerographics (PL8)
9- Frame & Size Sensor (PL9)
10- Electrical (PL10)

1- Covers (PL1)

Lever and Latch Assies	Latches the Cover Assy Front to the printer frame. Pressing the Lever disengages the Latch Assy L and the Latch Assy R so you can open the Cover Assy Front.
Tray Assy MBF	The paper tray for use with the Multibypass Feeder(MBF).
Chute ENV and Chute MBF	The paper path components that are used with the optional Envelope Feeder. The fed envelope passes between the Chute ENV and the Chute MBF. The bottom surface of the Chute MBF serves as part of the paper path for paper fed from the Tray Assy MBF.

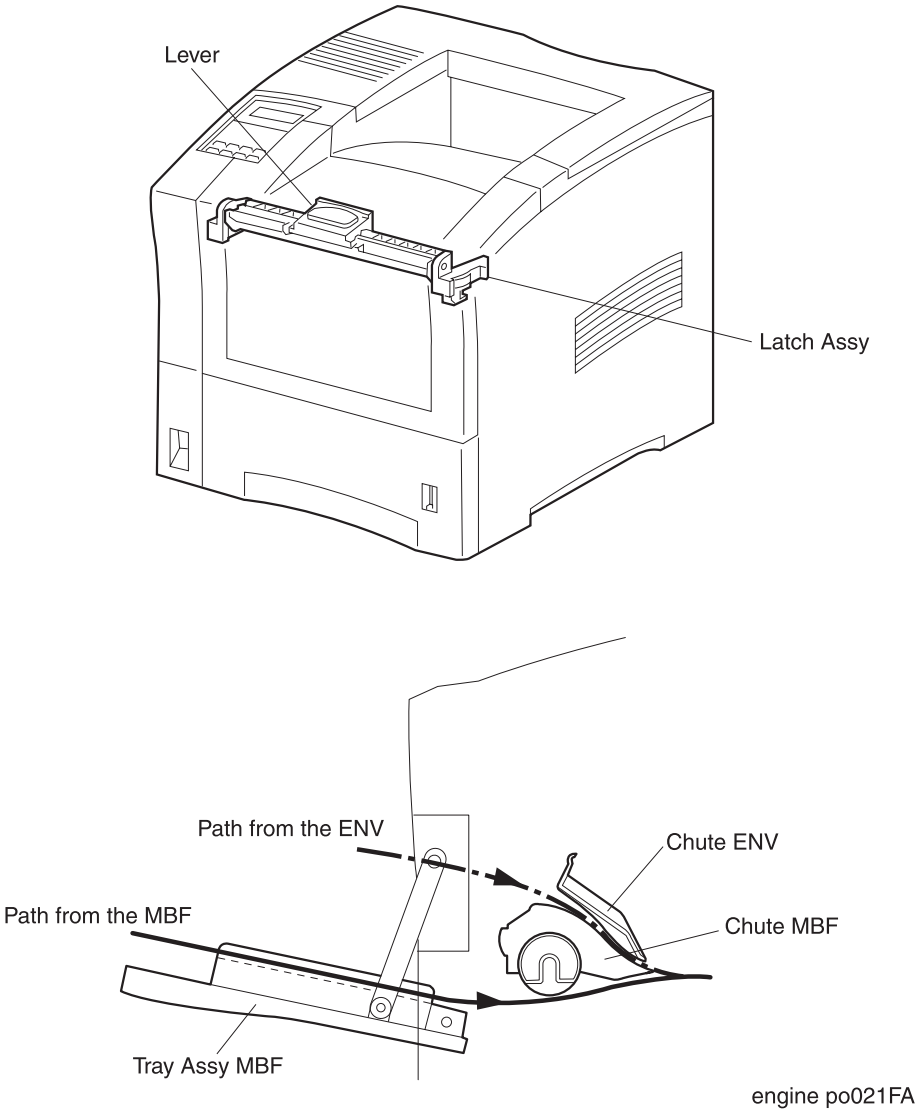

Figure 22. Components of the Cover Assy Front

2- Paper Cassette (PL2)

Cassette Assy

Holds various sizes of plain cut paper. (Envelopes are fed by the optional Envelope Feeder Assy, and post cards are fed by the MBF).

You adjust the cassette Guides Assy L and R to accommodate different paper sizes. Adjusting the Guide Assy End changes the position of actuators that press against the Cams SW that are equipped on the right bottom of the Frame and actuates the Paper Size Switches on the PWBA Size 1. The pattern of actuated Size Switches signals the size of the paper that is loaded in the paper cassette.

Motor Assy

Adjusts the face of the top sheet of paper stacked in the Cassette Assy with the Roll Assy of the Feeder Assy to ensure the feeding operation from the Cassette Assy. This Motor's is engaged with the Shaft Assy Torque fixed with the Plate Torque, and actuates the mechanism of lifting the front end of the Plate Assy Bottom conducted by the control signal from the PWBA HKB26 MCU that is triggered by the Sensor Photo: Face Control described in the next page.

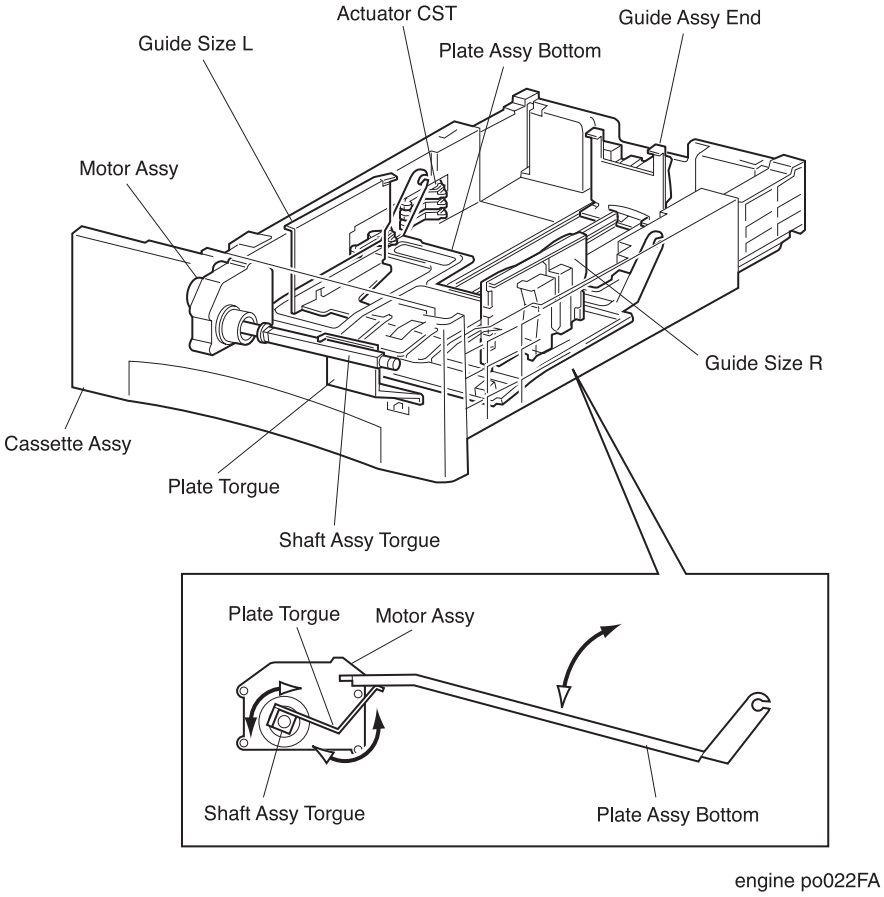

Figure 23. Components of the Paper Cassette

3- Paper Feeder (PL 3)

Clutch Assy Turn	Consists of a gear and an electric clutch. This is located on the end of a shaft of the Roll Assy Turn. This clutch controls the transmission of the drive power from the Gear Assy drive to the Roll Assy Turn by turning on and off the clutch magnet. When this clutch is activated, the drive power is transmitted to the Roll Assy Turn through the idle gears to the gear of the Clutch Assy Feed (See Figure 17. Drive Transmission to the Feed assy).
Clutch Assy Feed	Consists of a gear and a electric clutch. This is located on the end of a shaft of the Feeder Assy. This clutch controls the transmission of the drive power from the Gear Assy drive through the Clutch Assy Turn to the Roll Assy of the Feeder Assy by turning on and off the clutch magnet. When this clutch is activated, the drive power is transmitted to the Feeder Assy.
Feeder Assy	Consists of the Support Assy Nudger, Shaft Feed and Roll Assy. The task of this assy is to pick the paper from the Cassette Assy and feed it to the Roll Assy Turn. To ensure this task, the Support Assy Nudger acts as the actuator for the Sensor Photo:Face Control by swivelling itself up and down synchronizingthe hight of the stacked paper.
Roll Assy Turn	This assy feed the paper to the Regi position of the P/H assy. The mechanical activity is same as the Clutch Assy Turn.
PWBA Feeder	Connective interface between the Sensor Photos, the Clutches and Motor, and the PWBA Size 1 (or PWBA Size Option for the optional feeder). This PWBA also have the Sensor Photo: No Pap 1 which detects the out of paper of the Cassette when it shielded the sensing point by the Actuator N/P.
Actuator N/P	Actuates the Sensor Photo:No Pap 1. When out of paper, this actuator will swivel down and shield the Sensor Photo:No Pap 1.
Sensor Photo:Low Paper	Detects the state of low paper of the Cassette Assy.
Sensor Photo:Face Control	Detects the state that the paper level (the position of the top sheet of paper) goes near not so high to be able to feed.This sensor is actuated by the Support Assy Nudger.

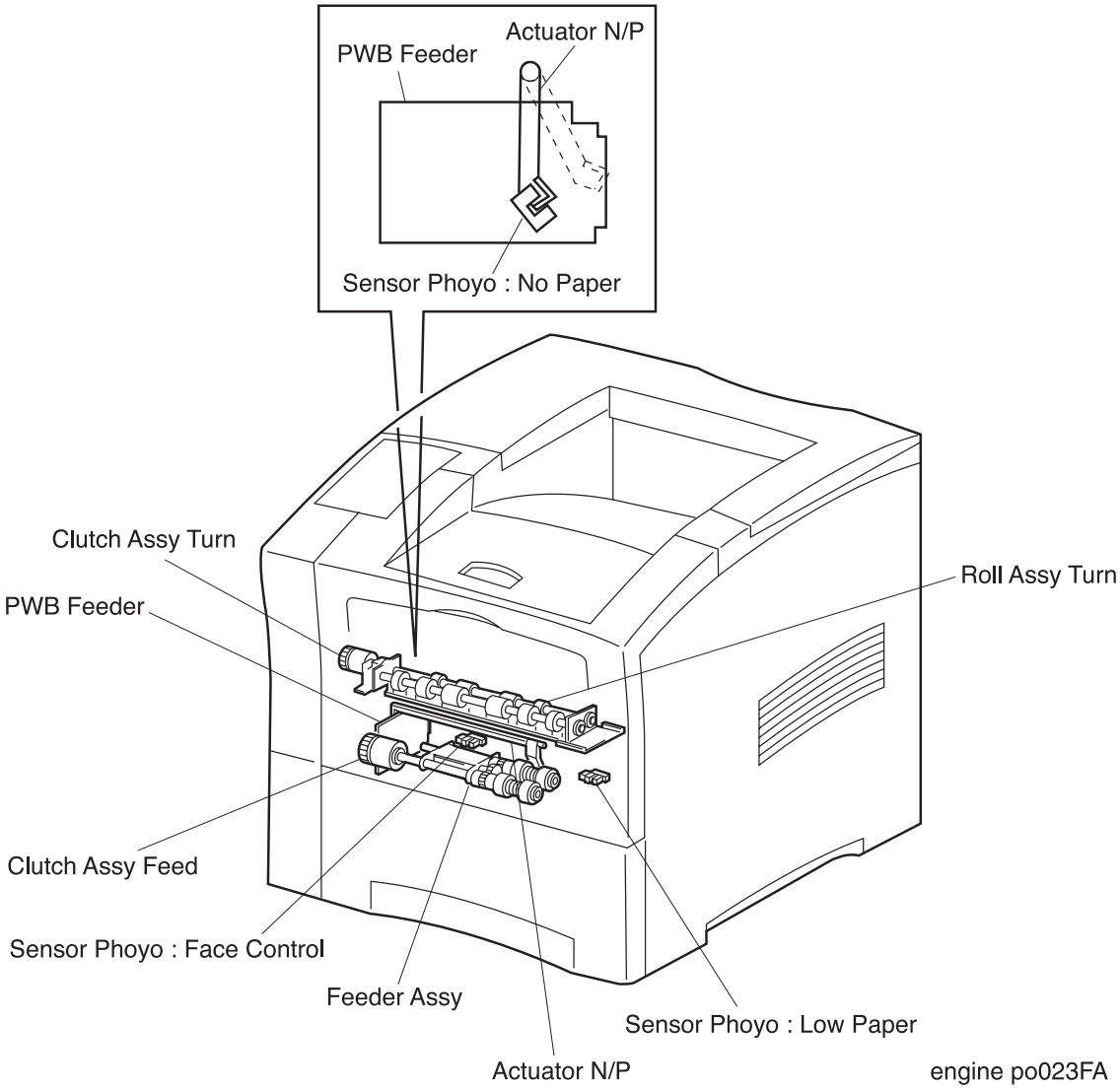

Figure 24. Components of the Paper Feeder

4- Chute MBF (PL4)

Roll Assy MBF	Consists of the Shaft Assy MBF, Roll Assy MBF and the Cam Pick Up MBF. This assy picks the paper from the Tray Assy MBF.
Solenoid Pick Up	Controls the start and stop of the rotation of the Roll Assy MBF. This engages the Gear Pick Up located the end of the Shaft Assy MBF.
Sensor Photo:Paper Set	Detects the existence of the paper on the MBF Tray.

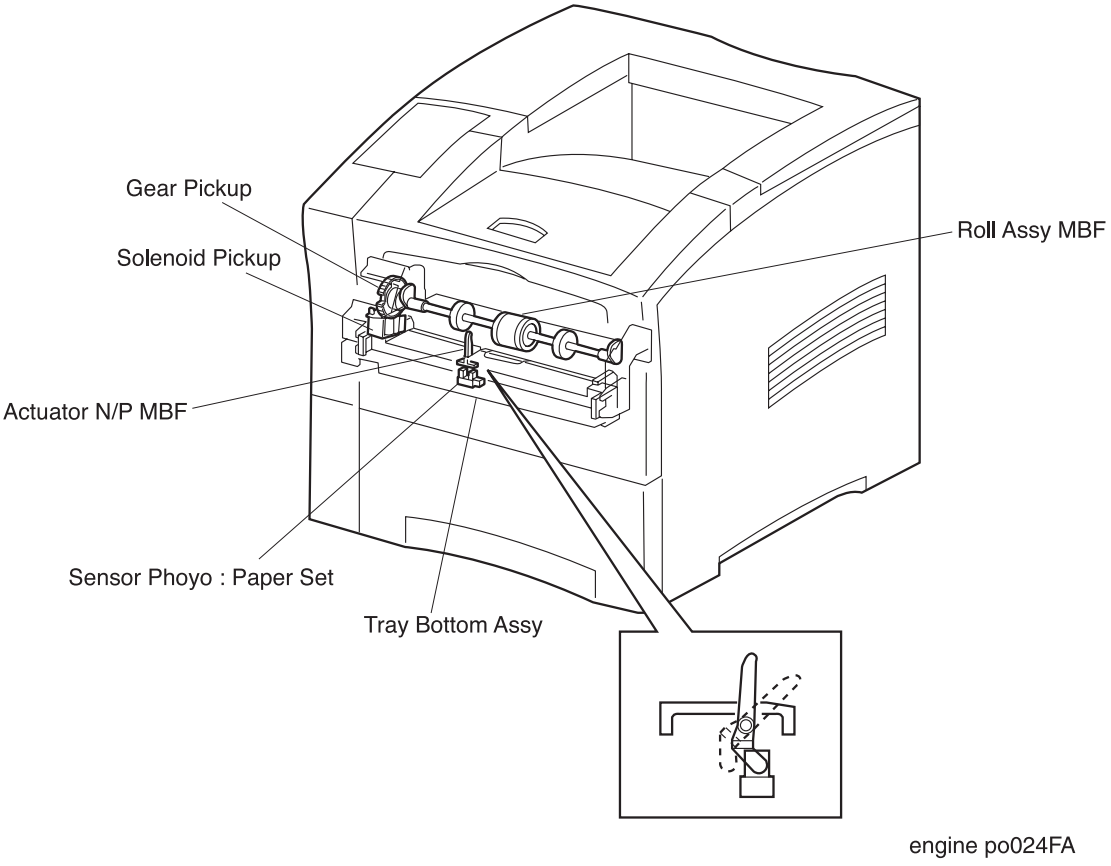

Figure 25. Components of the Chute MBF

5- P/H Assy (PL5)

Sensor Photo:Regi	Detects when a sheet of paper arrives at the Inlet and Chute Bottom Upper.The Sensor Photo:Regi is part of the components that are used to register the paper with the image on the drum.
Toner Sensor	Magnetic sensor that monitors the level of toner remaining in the CRU.
Retard Assembly	Prevents the MBF Roll Assembly from feeding more than one sheet of paper at a time.
Clutch Regi	Consists of the gear and the magnetic clutch and located on the end of the Roll Regi Rubber. When the Clutch Assy Regi is actuated, the drive power is transmitted to the Roll Regi Rubber.
Roll Regi Metal Roll Regi Rubber	The rotation of these Rolls is controlled by the Clutch Regi, and determines the register position of the paper with the image on the Drum.

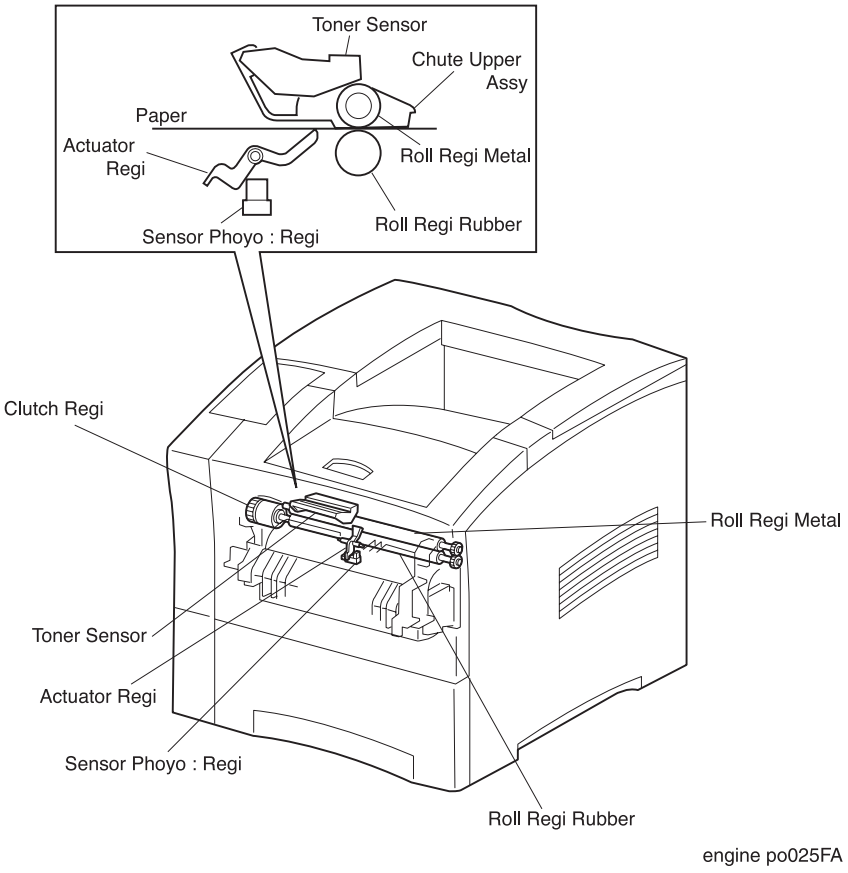

Figure 26. Components of the P/H Assy

6- Chute Trans & Paper (PL6)

BTR Assy (Bias Transfer Roll)	Transfers the toner image from the drum to the sheet of paper. The BTR applies a positive charge to the back of the sheet of paper as it travels between the BTR and the surface of the drum. The positive charge attracts the negative charged toner image on the drum, and the image transfers to the paper.
BTR Chute Assy	Uses the Detack Saw to strip the sheet of paper from the surface of the drum. The Saw electrically neutralizes the paper so it will easily peel away from the drum. This assy then transfers the paper into the Fuser Assy

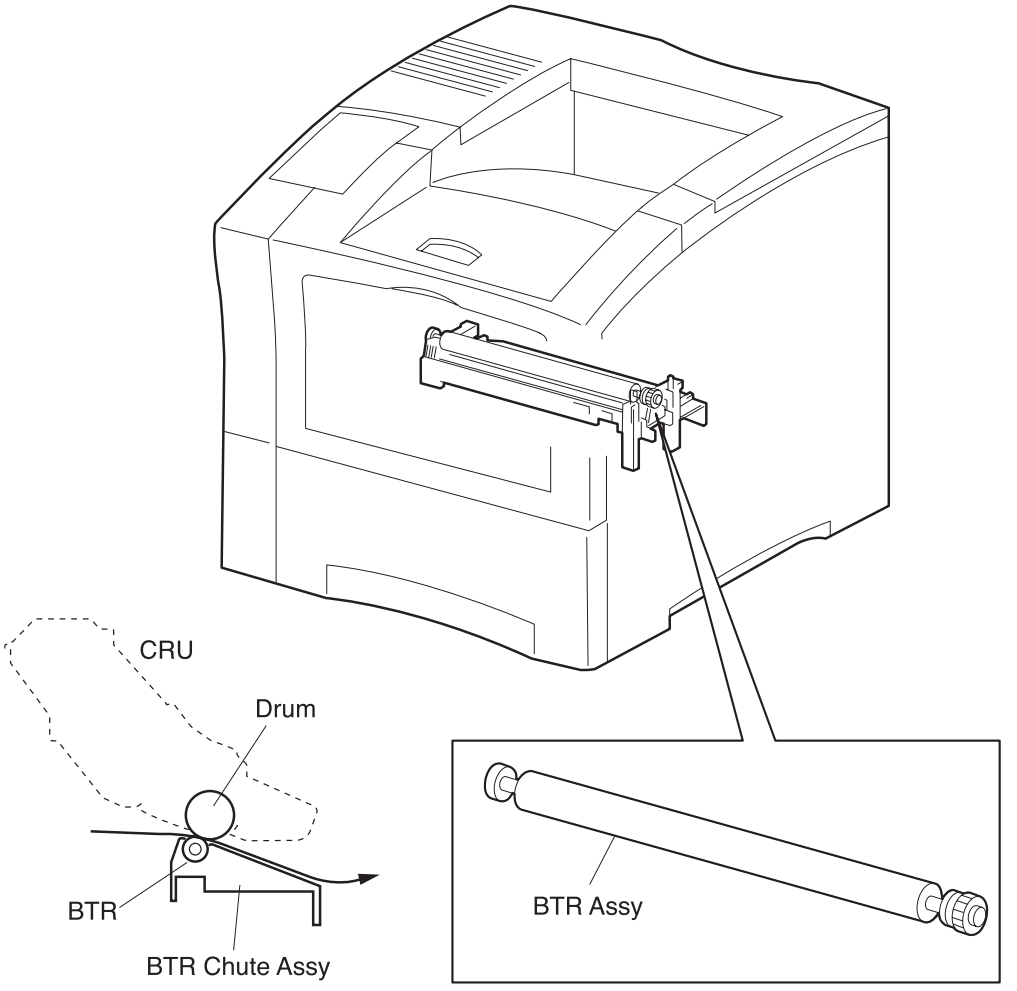

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Figure 27Components of the Chute Trans & Fuser (1/2) BTR Chute Assy

Fuser Assy

Uses heat and pressure to permanently fix the toner image onto a sheet of paper.

The Fuser Assy is made up of nine major components

Heat Rod: An electric coil that is sealed inside a glass tube. The Heat Rod is located inside the Heat Roll and provides the heat necessary to melt the toner image onto a sheet of paper.

Temperature Sensor: Monitors the Heat Roll surface temperature, switching the Heat Rod on or off to maintain the proper temperature range. The Temperature Sensor is a temperature sensitive resistor that rides the Heat Roll surface. The Temperature Sensor functions as the first–stage, fuser–overheat protection.

Heat Roll: A hollow, surface-coated metal tube that is heated by the Heat Rod, and in turn applies heat to a sheet of paper in order to melt the toner. The negative charge that builds up on the Heat Roll is shunted through a diode to frame ground.

Pressure Roll: A solid, rubber-coated metal shaft that presses the sheet of paper between itself and the Heat Roll. This bonds the toner to the paper.

Fuser Thermostat: Connected in series with the Heat Rod power supply, the Thermostat functions as the second-stage, fuser–overheat prevention. If the first stage fails to prevent a fuser overheat, the Thermostat opens the circuit between the Heat Rod and the power supply.

Fuse: Connected in series with the Heat Rod power supply, the Fuse functions as the third–stage, fuser over–heat prevention. If the both first and the second stages fail to prevent a fuser overheat, the fuse opens the circuit between the Heat Rod and the power supply.

Sensor Exit: Monitors when a sheet of paper passes the paper outlet. The sensor is ON when paper actuates the Actuator Exit of the Sensor Exit.

ActuatorExit/Sensor Exit: Monitors when a sheet of paper passes the paper outlet.

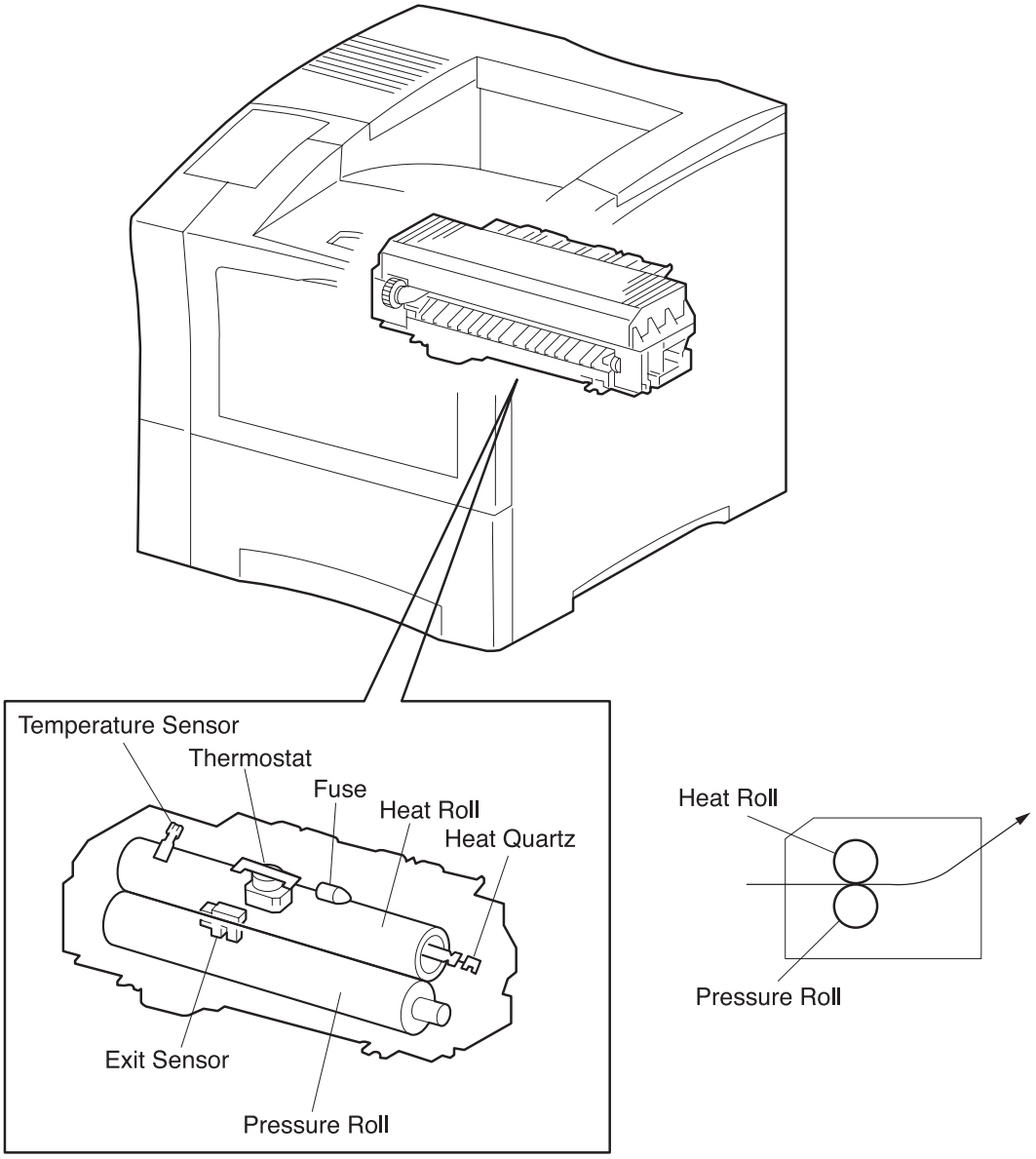

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Figure 28. Components of the Chute Trans & Fuser (2/2) Fuser Assy

7- Exit (PL7)

Roll Assy Mid-1	
Roll Assy Mid-2	Transports the paper from the Fuser Assy to the face down output tray, or to the optional OCT, Mailbox, or Duplex Assy.
Gate Exit	Switches the paper exit path to either the face down output tray, or to the optional OCT or Mailbox, if installed.
Sensor Photo:Exit Actuator Full Stack	Detects when the face down out is full of paper. This Senor Photo: Exit is also used detect the paper exit.
Motor Assy Exit	Drives the Roll Assy Mid-1 and the Roll Assy Mid-2.

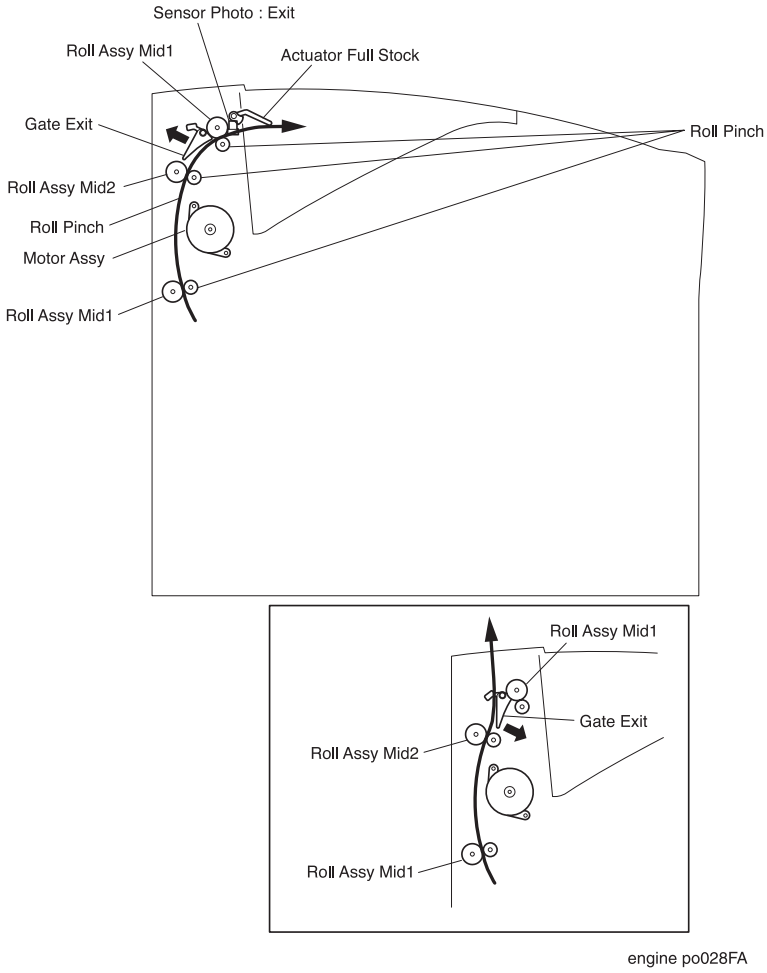

Figure 29. Components of the Exit

8- Drive & Xerographics (PL8)

ROS Assy

The Raster Output Scanner Assy is the laser and the scanning hardware. The ROS is made up of three major components; the Laser Diode Assy, the Scanner Assy, and the PWBA SOS.

LD Assy (Laser Diode Assy): Converts electrical signals into optical signals. The LD Assembly generates the laser beam and maintains the laser output power at a constant level.

Scanner Assy: Routes the laser beam to the drum, and scans it across the drum surface. The Scanner Assy consists of a fifteen sided Polygon Mirror that is attached to the Scanner Motor. The Motor rotates at a constant speed. The spinning Polygon Mirror reflects the beam, through a series of lens and mirrors, onto the rotating drum surface. The movement of the spinning Polygon Mirror scans the beam from one side of the drum to the other; one scan line per mirror facet. This process repeats until the controller stops sending image data to the laser.

The Scanner Motor uses a phase-locked loop (PLL) for speed control. Figure 30 shows the signal states for three speeds. Figure 31 is a block schematic diagram of the scanner driver.

Refer to Figure 30. The PLL compares the phase of the falling edge of the output signal from the Schmitt frequency generator (FG) with the rising edge of the Clock Signal (CLK). The output of the PLL is a voltage that is proportional to the differences in the phase of FG and CLK. The output is the phase detect (PD).

PD pulse duration indicates the amount of signal deviation observed. The frequency generator generates 15 pulses during each revolution of the Scanner Motor. A smoothing filter, using an integrating amplifier, converts the PD signal into a voltage value. The voltage is used as the feed-back to control the speed of the motor.

The Scanner Motor is driven by a three-phase, full-wave, linear drive. The current to the motor coil is switched by a Hall amplifier matrix that uses the signals from the PD to signal when to switch phases.

The signal /SCN MOT ON, from the PWBA HKB26 MCU, switches the Scanner ON. The signals SPI1 and SPI2 select a ratio of frequency division of the Clock signal. This ratio switches the resolution of the scanned image. The signals are always at HIGH, so the resolution cannot be switched.

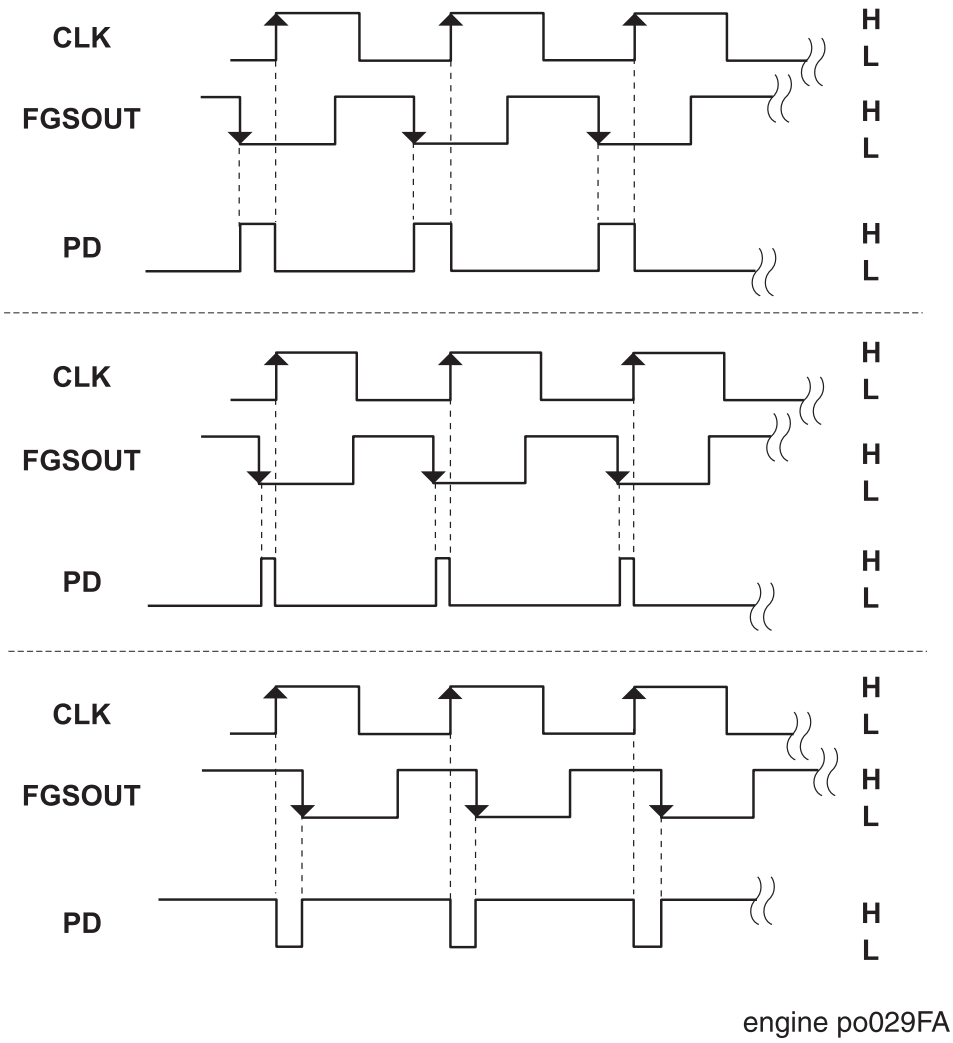

Figure 30. Scanner Motor Control Timing

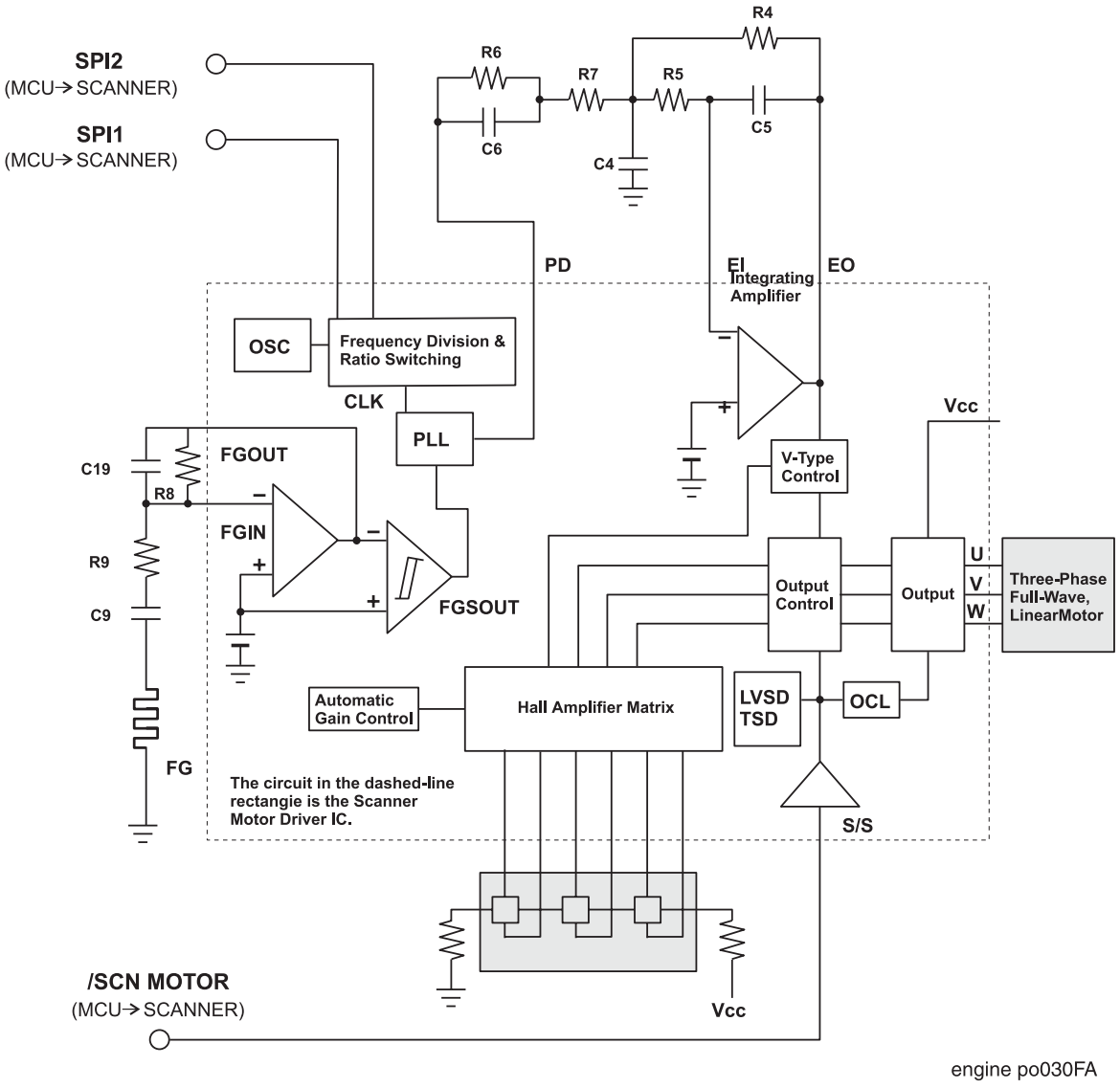

Figure 31. Block Schematic Diagram of the Scanner Driver

PWBA SOS (Start Of Scan): A sensor that is in-line with the scanning laser beam. The laser beam strikes the PWBA SOS at the start of each scan to let the printer control circuity know that a new scan is beginning.

The Structure and Operation of the ROS

The laser light source for the ROS is a semiconductor laser diode with a maximum output of 3mW. A monitor circuit keeps laser output at a constant level. Image data received from the print controller modulates the laser beam, turning it on and off according to image information.

The Current Switching Circuit switches the Laser Diode On and Off according to /nP.DATA sent by the PWBA HKB26 MCU. When /nP.DATA is LOW, the laser is ON. When /P.DATA is HIGH, the laser is OFF.

The PWBA HKB26 MCU also supplies the laser drive current (VL1 and VL2). Circuits within the laser use VL1 and VL2 to maintain a constant drive current for the laser diode. If either VL1 or VL2 changes value, the current in IL1 or IL2 change accordingly. The current flowing through the laser Diode (IL) changes, as does the current flowing through PD. PD monitors laser current, and supplies that information back to the MCU.

When you use Configuration Mode to adjust laser current, you are adjusting VL1 or VL2, so MO equals the value stored in NVRAM.

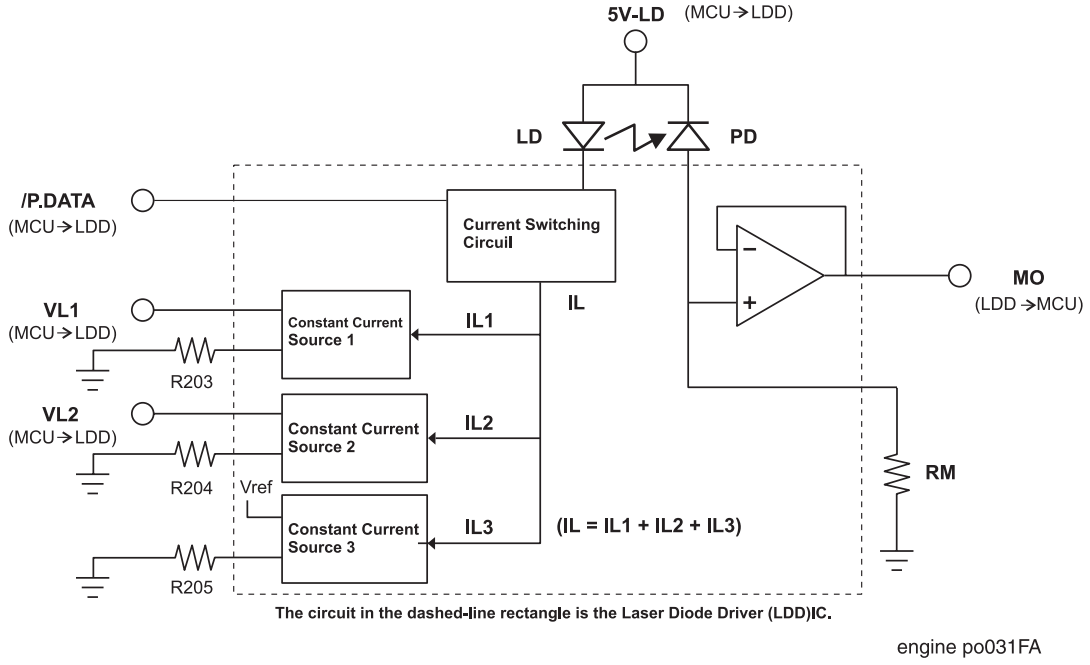

Figure 32. Laser Diode Current Control

The Cylinder Lens and a slit in the ROS housing shape the laser light into an oblong beam. Mirror 1 and Mirror 2 direct the beam to the rotating polygon mirror. Each facet of the polygon mirror reflects the beam through correcting Lenses 1 and 2 and through Mirrors 3 and 4, and onto the drum surface.

The start of each scan, or of each facet reflection, is diverted by Lens 2 onto Mirror 2, which reflects the beam onto Mirror 5 through Mirror 4. Mirror 5 reflects the beam onto the SOS senor. The sensor tells the print controller that a scan has started.

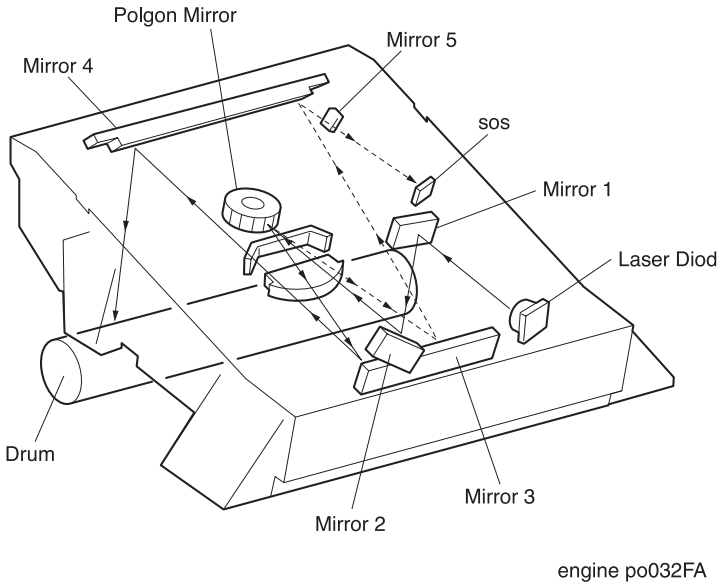

Figure 33. The ROS Assy

Motor Assy Main — Generates the drive power.

Gear Assy Drive — Transmits the drive power created by the Motor Assy Main to the Paper Feeder, the Fuser Assy, the CRU, and the Optional Envelope Feeder Assy.

Sensor Assy CRU — The CRU Sensor monitors the presence or absence of the CRU.

CRU (Electro-Photography) — The CRU is composed of six major components.

Drum: An aluminum cylinder with a coating of photoconductive material on the surface. The photoconductive property of the drum allows the drum surface to hold an electrical charge while in darkness, and discharge it when exposed to light.

Bias Charge Roll (BCR): Places a uniform electrical charge on the drum surface. At the end of a print cycle, the BCR applies an AC voltage to the surface of the drum to neutralize any electrical patterns remaining from the last print cycle.

Magnet Roll: Distributes toner to the drum surface.

Charge Metal Blade (CM Blade): Spreads an even coating of toner on the Magnet Roll, and gives the Roll a static–electric charge.

Cleaning Blade: Removes any residual toner left on the drum from the last print cycle.

Drum Shutter: When the CRU is in place in the printer and the Front Cover is closed, the Drum Shutter opens to expose the area of the drum surface that comes into contact with the paper during a print cycle. When the CRU is out of the printer or when the Front Cover is open, the drum shutter closes to protect the drum surface from light shock and contamination.

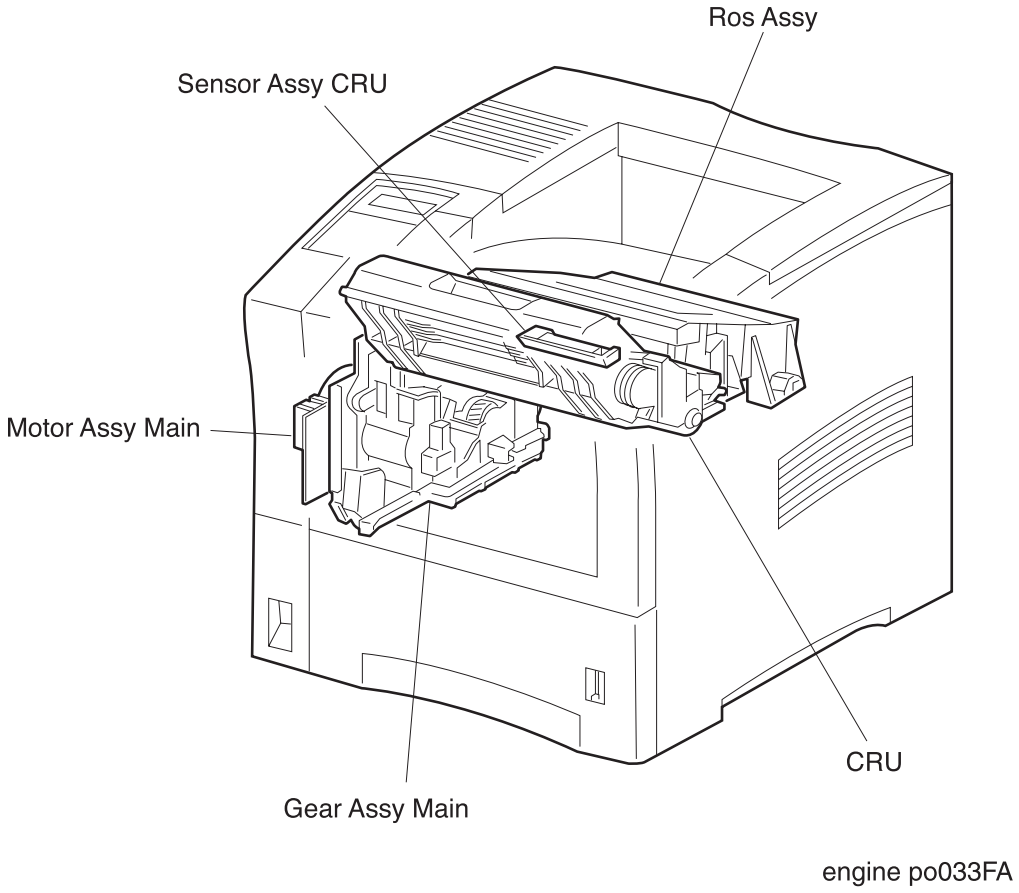

Figure 34. Components of the Drive & Xerographics

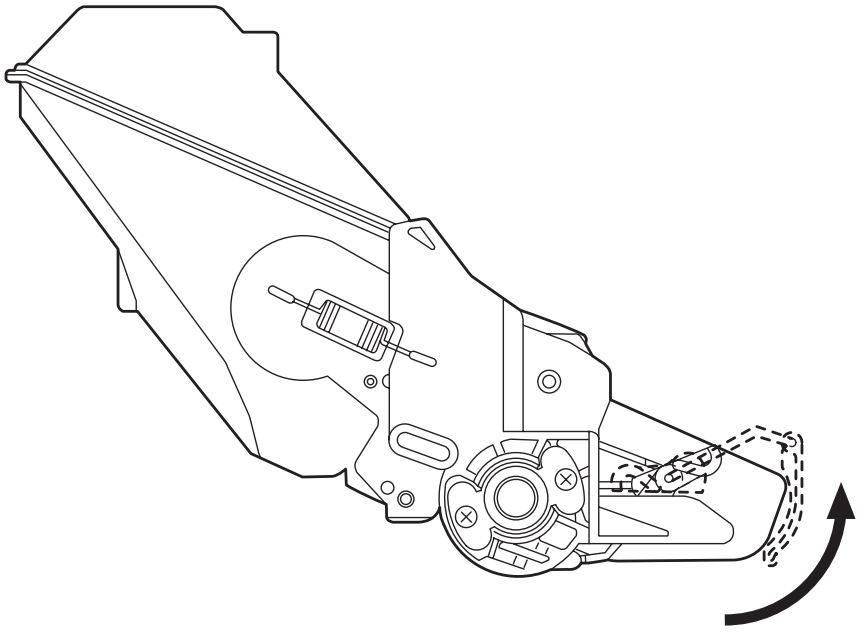

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Figure 36. CRU Side View and Shutter

9- Frame & Size Sensor (PL9)

PWBA Size 1	Connective PWBA between the PWBA HKB26 MCU, PWBA Feeder and the PWBA Size Option. This receives and sends the signals, information data, and electric power. The Switch Size is mounted on this PWBA, which detects the paper size loaded in the Cassette through the configuration of the Cam SW actuated by the Actuator CST of the Cassette Assy.
Fan Assy	Moves air through the printer interior to prevent heat buildup.

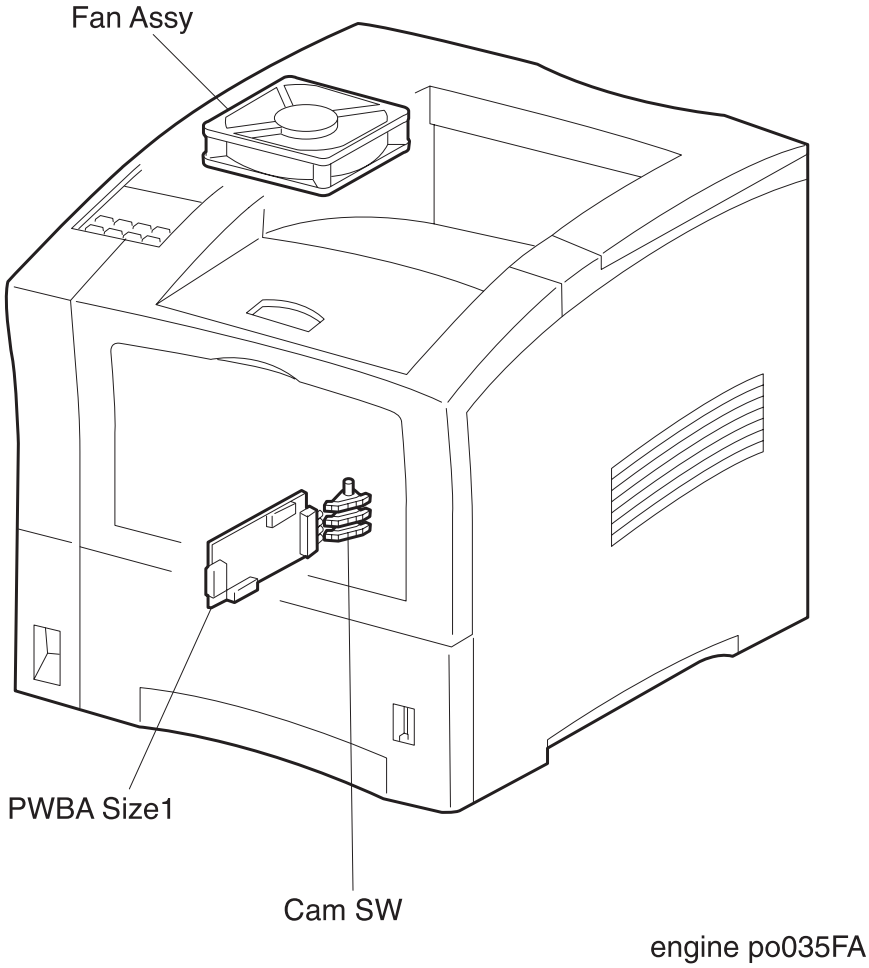
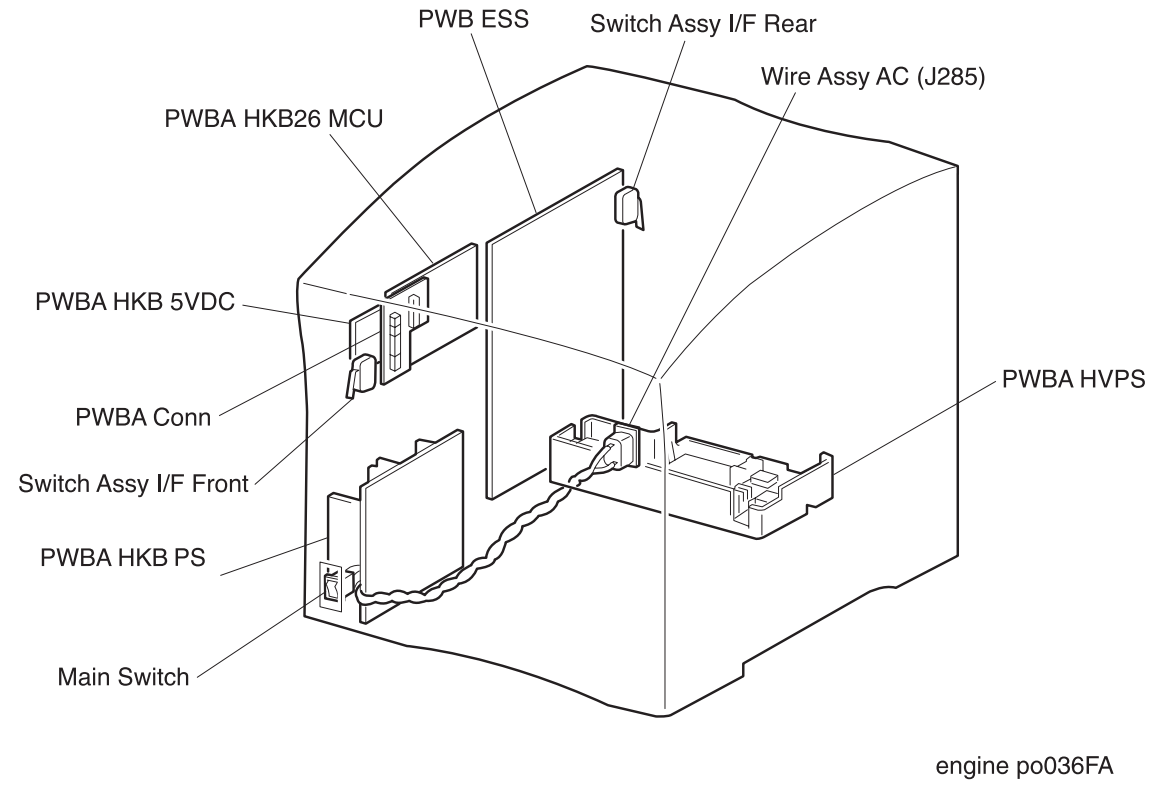


Figure 36. Components of Frame & Size Sensor

10- Electrical (PL10)

PWBA HKB PS (PWBA LVPS)	The Low Voltage Power Supply Assy supplies AC power to the Heat Rod and 5VDC, 3.3VDC, and 24VDC to the PWBA HKB26 MCU. The LVPS Assy includes a safety interlock switch named the Switch Assy I/L Front. When the Cover Assy Front is opened, the interlock opens the LVPS circuits, cutting all DC power.
PWBA HKB26 MCU	The Main Control Unit PWB, with input from sensors, switches, and the printer controller, controls all printer operations. The PWBA HKB26 MCU has five major functions. 1. Communicates with the printer controller. 2. Receives information from printer sensors and switches. 3. Controls the ROS Assy, Fuser Assy, and Drive components. 4. Controls the printing process. 5. Distributes DC power from the PWBA LVPS to other printer components.
PWBA HVPS	The High Voltage Power Supply Assy supplies high voltage AC and DC to the Fuser, BCR, BTR, Detack Saw, and Magnet Roll.
PWBA 5VDC	Converts 24VDC delivered from the PWBA LVPS to 5VDC to be supplied to the PWB ESS.
PWBA Conn	Connective PWBA between the PWBA GHKB MCU and such the components as Sensor Photo:Regi, Sensor Photo:Paper Set, Toner Sensor, Solenoid Pick Up and Clutch Regi. This PWBA also has the interface port to the PWBA ENV.
Switch Assy I/L Rear	The interlock switch which break the DC circuit of the Motor Assy Exit when the Cover Rear opens.
Main Switch	Mounted on the printer frame. The Main Switch controls AC wall voltage into the printer, and is used to switch the printer OFF and ON.
Power Cord	Connects the printer to an AC wall outlet. Power Cord types vary depending on the power rating of the printer (110/220VAC).



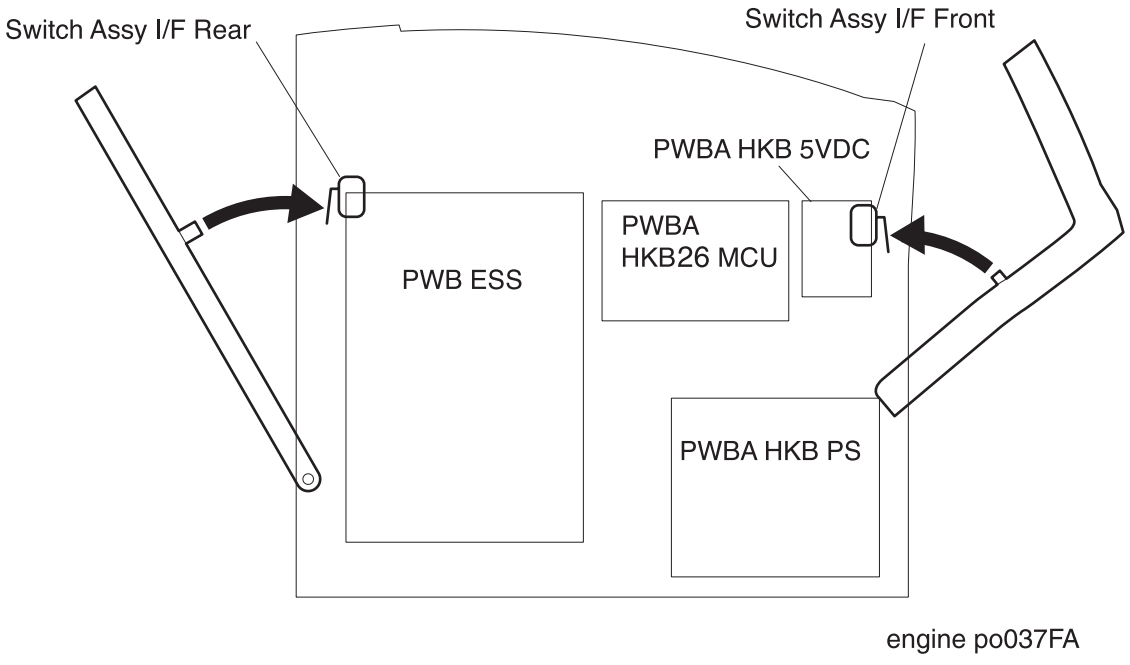


Figure 37. Electrical Components

MCU and Control Panel Functions

The MCU performs nine main functions.

1. Communicates with the Printer Controller.
2. Controls the print sequence.
3. Controls the Fuser Assy, ROS Assy, and Drive components.
4. Distributes low DC voltages to various printer components.
5. Monitors printer status, such as the Fan Alarm.
6. Maintains a running print count.
7. Writes the NVRAM settings.
8. Controls printer optional devices.
9. Interfaces with the outer computer to be used the diagnostic analysis.

The MCU uses a 32 bit microcomputer and ASICs (Application Specific Integrated Circuits). The 32 bit microcomputer includes ROM, RAM, a 16 bit integrated timer, a programmable timing pattern controller, a watch dog timer, serial communication interfaces, an A/D converter, a D/A converter, I/O ports, a DMA controller, and a refresh controller.

The Printer Controller connects to the PWBA HKB26 MCU directly. The Control Panel is connected the Printer Controller and signals of it pass through the MCU via the Printer Controller. Table H-1 shows the signals that are used by the MCU and the Controller.

SIGNAL	DIRECTION	FUNCTION
/CCLK	MCU<Controller	**Controller Clock:** Synchronizing clock used for transmission of command and status.
/VDO	MCU<Controller	**Video:** Video data signal for maintaining synchronization using /TOP and /BD. The transmission rate of 600dpi video data is 17.62726Mpixel/sec and 1200dpi is 70.50902 Mpixel/sec.
/CPRDY	MCU<Controller	**Controller Power Ready:** Goes Low when the Controller is powered up and the CPU completes initialization. When High, the printer turns itself into the "Power-on" condition, such as those of following: • ROS Condition The "ROS PAUSE" is selected. • Exit tray Selection The "STANDARD STACKER" is selected. • Misprint Mode The "MISPRINT" is released. • Mismatch Detection The "MISMATCH DISABLE" is selected. • Fuser Condition The "RESET FUSER PAUSE" is selected.
/CBSY	MCU<Controller	**Command Busy:** The Controller holds this signal Low when sending a command at the condition that /SBSY is Low or /PPRDY is High.
/STA	MCU>Controller	**Status:** The MCU sends a status (8 bits), synchronizing with /CCLK sent by the Controller when the MCU holds /SBSY Low.
/TOP	MCU>Controller	**Top of Paper:** Vertical synchronizing signal.
/PPRDY	MCU>Controller	**Printer Power Ready:** Goes Low when the printer is powered on and the MCU CPU completes initialization The printer is now in ON-LINE mode.
/PRFD	MCU<Controller	**Prefeed:** When Controller sends this signal, the printer feeds a sheet of paper to a spot that is just before the registration position, and waits for /START. This signal effective only when /RDY is Low.

SIGNAL	DIRECTION	FUNCTION
/CMD	MCU<Controller	**Command:** Command signal. The Controller sends a command (8 bits); synchronizing with /CCLK, and holding / CBSY Low.
/START	MCU<Controller	**START:** Signal telling the printer to start the print operation. This signal is valid when /RDY is Low.
/SBSY	MCU>Controller	**Status Busy:** The MCU holds this signal Low when it is sending a command. This signal is not Low when /CBSY is Low or /CPRDY is High.
/RDY	MCU>Controller	**Ready:** The MCU holds this signal Low when it receives / PRFD and /START. When /RDY is High, /PRFD and / START are ignored. /RDY goes High when the printer is in one of the following states: 1. Call 2. Pause/Diag 3. Wait 4. Misprint 5. /PPRDY set High
/BD	MCU>Controller	**Beam Detect**: Horizontal synchronization signal. The Controller transmits the one line of video data that is synchronized with this signal. The period of the /BD signal is 361.82 ▪ s for 600 dpi and 180.91 ▪ s for 1200 dpi.

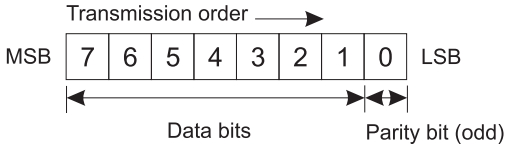
Table H-1. Signals that are used between the MCU and the Controller

MCU/Controller Commands and Statuses

The Controller sends **Commands** to the MCU to either query the state of the printer or to control a print engine function. The MCU returns **Statuses** to the Controller that report either the state of the printer or the result of a command execution.

Specifications of the Transmissions for Commands and Statuses

- Serial transmission, synchronized with a clock signal
- Connection: Half duplex
- Transmission rate: /CCLK=2~16 ▪ s
- Data length: 8 bits
- Data check: Odd parity
- Transmission order: MSB first
- Signal lines: /CMD=command, /STA=status
- Data format:



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Command Format

Commands lengths range from 1~5 bytes. The first byte is the header. The rest of the bytes are data codes.

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- The **header code** is a unique, two digit hexadecimal number that includes the parity bit.
- The MSB (Most Significant Bit) of each **data code** is always 1. The LSB (Least Significant Bit) is always used as the parity bit. The six bits between the MSB and the LSB are the data bits.

Status Format

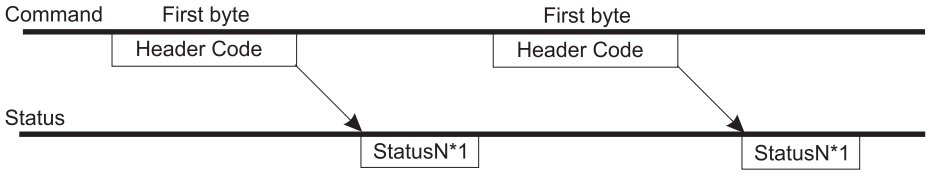
Statuses have a length of one byte. The MSB of each status byte is 0. The LSB is used as the parity bit. The six bits between the MSB and the LSB are the data bits.

Command/Status Transmission and Reception Procedure

The MCU never voluntarily sends a status. The MCU sends a status only as a response to a command that is sent by the Controller. After the Controller sends a command, it does not send another command until it receives a response from the MCU.

- One byte command:

  The printer returns status N*, which corresponds to the header code of the received command.



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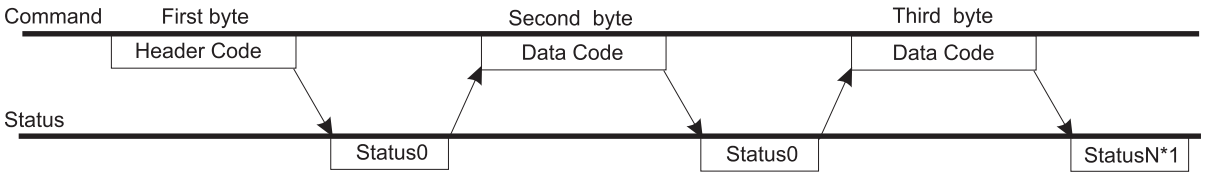
- Multiple byte command:

  Multiple byte commands are transmitted in separate bytes. The printer determines the length of the command from information presented in the header code, and returns status 0 in response to each header and the following bytes, except the last byte. After the last byte is received, the printer returns a status N* which corresponds to the header code.



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- Command errors

  The MCU checks the received command for three types of errors. If the MCU detects an error, it returns an Error status. When the Controller receives the Error status, it retransmits the command.

  - "Undefined" error
  - "Incorrect use" error
  - "Parity" or "Framing" error

- Status errors

  If the MCU returns a status error, and the Controller is in the middle of transmitting a multiple byte command, the Controller ignores the status error and completes the transmission. If the Controller receives a status error in response to a command (except status 0), the Controller can retransmit the command and declare a fault only after a set number of error returns. The action of the Controller is determined by the specifications of the Controller software.

Commands and Status Table

Table H-3 lists the commands and statuses that are used by the MCU and the Controller.

COMMAND	HEX.	CONTENT	STATUS RETURNED	CONTENT OF RETURN STATUS
STATUS 0 REQUEST	01	Requests Status 0	STATUS 0	Printer state
STATUS 1 REQUEST	02	Requests Status 1	STATUS 1	Operator call
STATUS 2 REQUEST	04	Requests Status 2	STATUS 2	Service call
STATUS 3 REQUEST	07	Requests Status 3	STATUS 3	Detailed information on misprint
STATUS 4 REQUEST	08	Requests Status 4	STATUS 4	Number of sheets of paper for required for retransmission of data
STATUS 5 REQUEST	0B	Requests Status 5	STATUS 5	Size of paper in top Cassette
STATUS 6 REQUEST	0D	Requests Status 6	STATUS 6	Size of paper in middle Cassette
STATUS 7 REQUEST	0E	Requests Status 7	STATUS 7	Size of paper on MBF
STATUS 8 REQUEST	10	Requests Status 8	STATUS 8	Detailed printer state
STATUS 9 REQUEST	13	Requests Status 9	STATUS 9	Size of paper in bottom Cassette
STATUS 10 REQUEST	15	Requests Status 10	STATUS 10	Paper feeder selection
STATUS 11 REQUEST	16	Requests Status 11	STATUS 11	Printer code
STATUS 12 REQUEST	19	Requests Status 12	STATUS 12	Model identification
STATUS 13 REQUEST	1A	Requests Status 13	STATUS 13	Exit selection
STATUS 14 REQUEST	1C	Requests Status 14	STATUS 14	Size of envelope on Envelope Feeder
STATUS 15 REQUEST	1F	Requests Status 15	STATUS 15	Remaining amount of toner
STATUS 16 REQUEST	20	Requests Status 16	STATUS 16	Printer status.
STATUS 17 REQUEST	23	Requests Status 17	STATUS 17	Fail 1of component
STATUS 18 REQUEST	25	Requests Status 18	STATUS 18	Configuration of paper feeders (Cassettes and Trays)
STATUS 20 REQUEST	29	Requests Status 20	STATUS 20	Fail 2 component
STATUS 21 REQUEST	2A	Requests Status 21	STATUS 21	Information on whether each paper feeder is empty or not
STATUS 22 REQUEST	2C	Requests Status 22	STATUS 22	Current settings for resolution, enabling or disabling paper size mismatch detection, etc
STATUS 23 REQUEST	2F	Requests Status 23	STATUS 23	Value set for print density
STATUS 24 REQUEST	31	Requests Status 24	STATUS 24	Adjustment value for lead edge registration
STATUS 25 REQUEST	32	Requests Status 25	STATUS 25	Adjustment value for side edge registration
STATUS 26 REQUEST	34	Requests Status 26	STATUS 26	Life count (bit 19 and bit 18)
STATUS 27 REQUEST	37	Requests Status 27	STATUS 27	Life count (bit 17 to bit 12)
STATUS 28 REQUEST	38	Requests Status 28	STATUS 28	Life count (bit 11 to bit 6)
STATUS 29 REQUEST	3B	Requests Status 29	STATUS 29	Life count (bit 5 to bit 0)
STATUS 30 REQUEST	3D	Requests Status 30	STATUS 30	Printer status
SET PAUSE	45	Sets printer in Pause mode	STATUS 0	Printer state

COMMAND	HEX.	CONTENT	STATUS RETURNED	CONTENT OF RETURN STATUS
RESET PAUSE	46	Reset out of Pause mode	STATUS 0	Printer state
ROS STANDBY MODE	49	ROS Istanbul Request	STATUS 0	Printer state
ROS P'AUSE MODE	4A	ROS Pause Request	STATUS 0	Printer state
SELECT TRAY EBF	4C	Selects Envelope Feeder	STATUS 0	Printer state
SELECT TRAY MBF	4F	Selects MBF	STATUS 0	Printer state
SELECT TRAY MAIN	51	Selects top Cassette	STATUS 0	Printer state
SELECT TRAY AUX1	52	Selects middle Cassette	STATUS 0	Printer state
SELECT TRAY AUX2	54	Selects bottom Cassette	STATUS 0	Printer state
SET DPI	57	Sets DPI value	STATUS 0	Printer state
SET LD POWER (2byte command)	58	Sets LD power	STATUS 0 STATUS 0	Printer state
SET MBF SIZE (2byte command)	5B	Sets paper size for MBF	STATUS 0 STATUS 0	Printer state
RESET MISPRINT	5D	Resets out of misprint	STATUS 0	Printer state
RESET FUSER LIFE	5E	Resets fuser warning	STATUS 0	Printer state
SET EBF SIZE	61	Set EBF size	STATUS 0	Printer state
START	62	Start indication	STATUS 0	Printer state
TEST PRINT	64	Indication of start test print	STATUS 0	Printer state
SET CUSTOM SIZE	67	Set custom size	STATUS 0	Printer state
PREFEED	68	Indication of prefeed	STATUS 0	Printer state
SET FUSER TEMP (2bytes command)	6B	Select Fuser Set Temperature	STATUS 0 STATUS 0	Printer state Printer state
MISMATCH ENABLE	6D	Enables paper size mismatch detection	STATUS 0	Printer state
MISMATCH DISABLE	6E	Disables paper size mismatch detection	STATUS 0	Printer state
SWITCH PRINTING MODE	70	Switches Duplex between ON and OFF	STATUS 0	Printer state
SWITCH OUTPUT DIR	73	Switches paper exit direction.	STATUS 0	Printer state
SWITCH OFFSET FNC	75	Switches Job Offset between ON and OFF	STATUS 0	Printer state
DIAG IN	76	Enters Diagnostic mode	STATUS 0	Printer state
DIAG OUT	79	Exits Diagnostic mode	STATUS 0	Printer state
DIAG EXECUTE (2byte command)	7A	Executes Diagnostic operation	STATUS 0 DIAG STATUS	Printer state Printer state
MEMORY READ (2byte command)	7C	Reads settings from Non-volatile memory	STATUS 0 DIAG STATUS	Printer state Printer state

COMMAND	HEX.	CONTENT	STATUS RETURNED	CONTENT OF RETURN STATUS
MEMORY WRITE (3byte command)	7F	Writes a new value in Non-volatile memory	STATUS 0 STATUS 0 STATUS 0	Printer state Printer state Printer state
START	85	Start Indication	STATUS 0	Printer state
SNR STATUS1 REQUEST	86	Read out the state of sensors	SNR STATUS1	Paper path sensors
SNR STATUS1 REQUEST	89	Read out the state of sensors	SNR STATUS2	Cover sensors
SNR STATUS1 REQUEST	8A	Read out the state of sensors	SNR STATUS3	No Paper senors
SNR STATUS1 REQUEST	8C	Read out the state of sensors	SNR STATUS4	Full stack/ Low paper sensors
SNR STATUS1 REQUEST	8F	Read out the state of sensors	SNR STATUS5	Toner/Units presense sensors

Table H-2. Command and status returns for the Controller and MCU

Timing Sequence for Simplex Printing

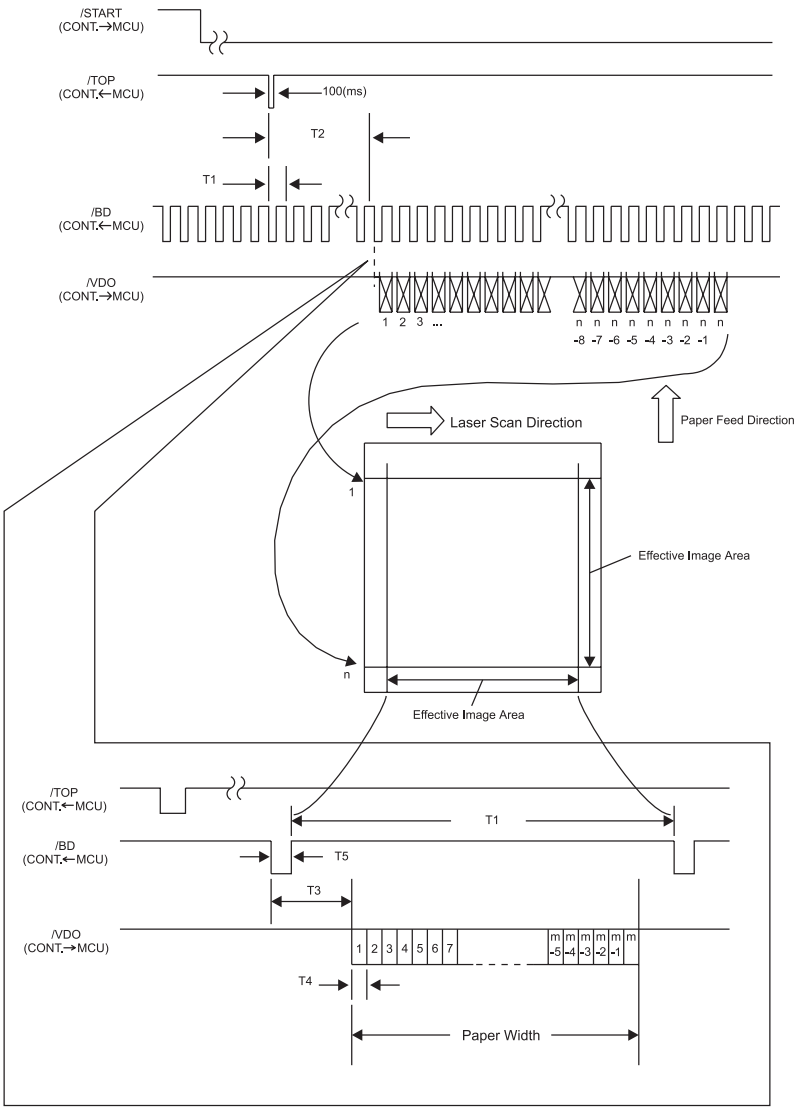
T1=361.82µs for 600dpi, 180.91µs for 1200dpi

T2=110ms

T3=Dependent on paper size and dot per inch

T4=56.730ns for 600dpi, 14.183ns for 1200dpi

T5=Approx. about 1.2µs for 600dpi, about 0.6µs for 1200dpi



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Simplex Page Sequence

In Simplex Mode, one side of each sheet of paper is printed according to the corresponding image data for that page.

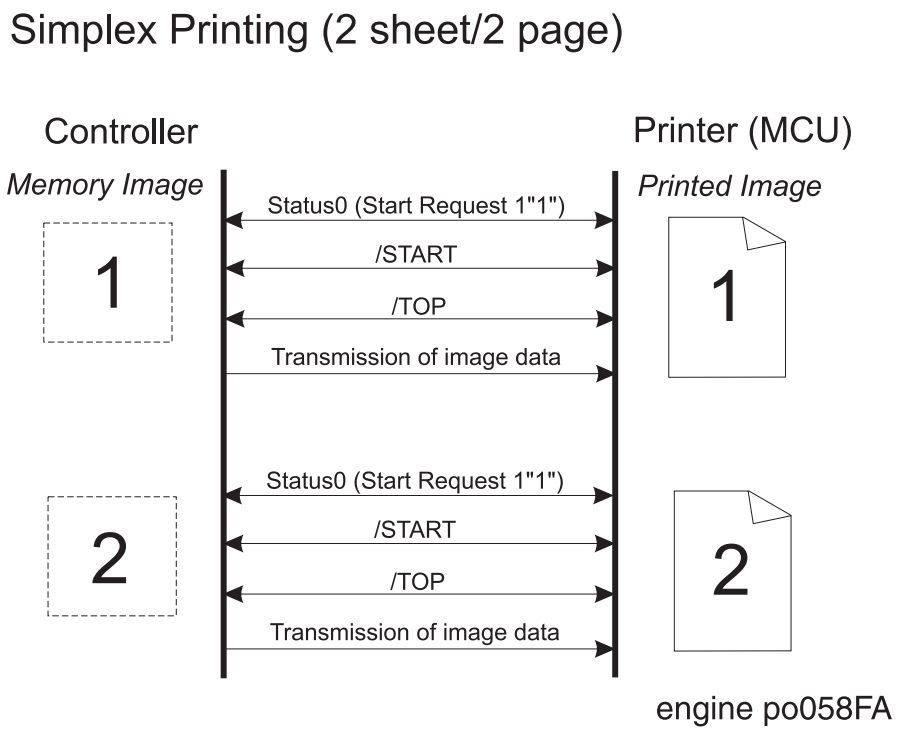
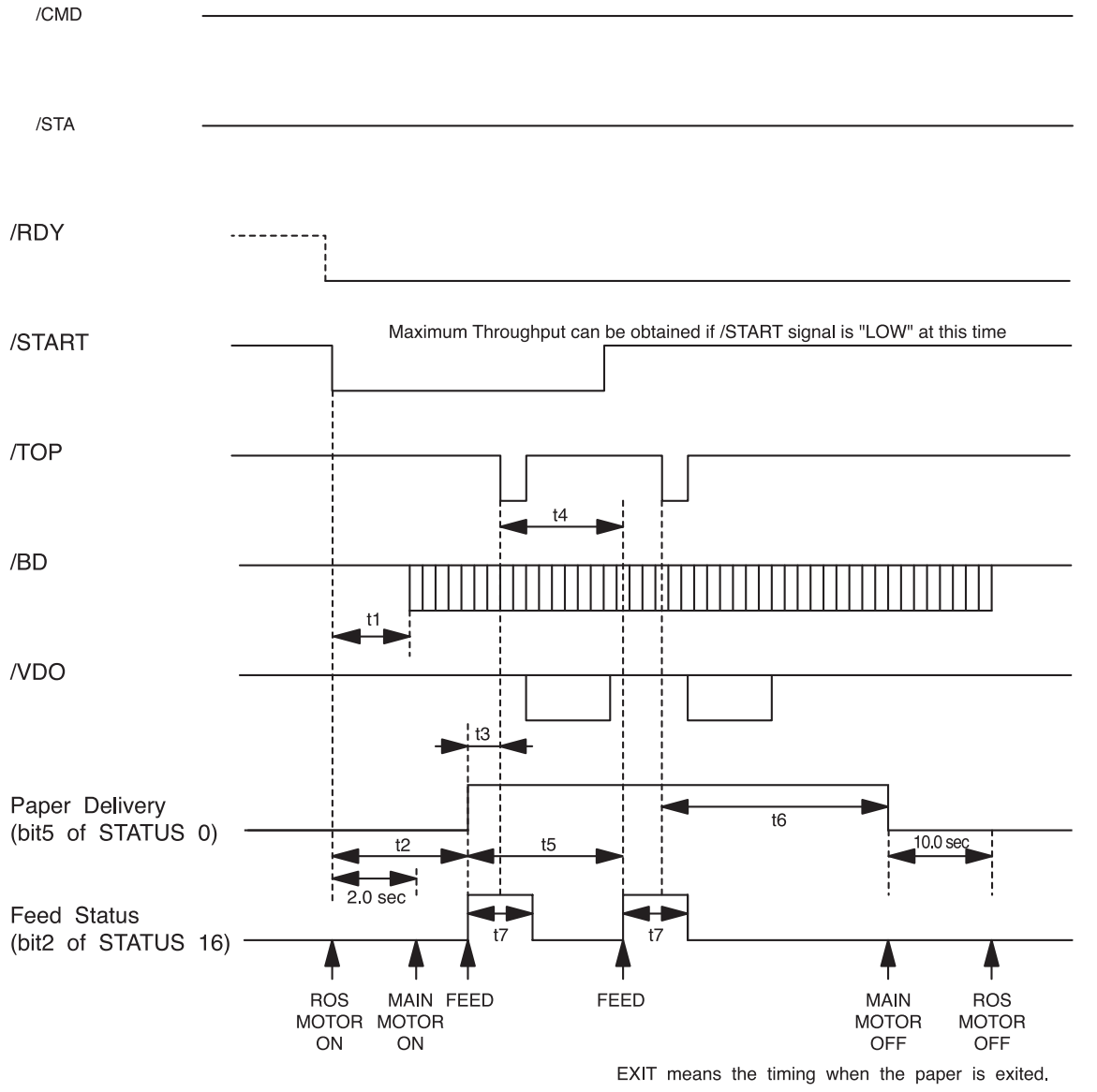


Figure 38. Simplex Page Sequence

Simplex Printing Timing



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Simplex Printing Chart Values

Timing Chart Values

t1= The time between /START and laser light emission. The /BD signal is not sent during this time.

t2= The time between /START and the first sheet of paper is fed. When paper feed begins, the paper delivery bit is set to “1”.

t3= From the beginning of paper feed to when the /TOP signal is sent.

Resolution	t1 (sec.)
600 dpi	TBD
1200 dpi	TBD

Tray Used	t3 (sec.)	t2 (sec.)
Main	TBD	TBD
Aux1 (Middle)	TBD	TBD
Aux2 (Bottom)	TBD	TBD
MBF	TBD	TBD
Env. Feeder	TBD	TBD

t4= The time from transmission /TOP signal until starting the next /START signal sampling.

T4 = T5 -T3

Paper Size	t4 (sec.)				
	Main (Top)	Aux 1 (Mid.)	Aux 2 (Bot.)	MBF	Env.
Index Card	-	-	-	TBD	-
Postcard	-	-	-	TBD	-
Monarch	-	-	-	TBD	TBD
A5	TBD	TBD	TBD	TBD	-
Statement	-	-	-	TBD	-
DL	-	-	-	TBD	TBD
C5	-	-	-	TBD	TBD
Com # 10	-	-	-	TBD	TBD
B5 (ISO)	-	-	-	TBD	-
B5 (JIS)	TBD	TBD	TBD	TBD	-
Executive	TBD	TBD	TBD	TBD	-
Letter	TBD	TBD	TBD	TBD	TBD
A4	TBD	TBD	TBD	TBD	TBD
Legal 13"	TBD	TBD	TBD	TBD	-
Legal 14"	TBD	TBD	TBD	TBD	-
Universal/Custom	TBD	TBD	TBD	TBD	TBD

t5= The time between paper feeds at full power.

t5 = t4 + t3

Paper Size	t5 (sec.)
Index Card	TBD
Postcard	TBD
Monarch	TBD
A5	TBD
Statement	TBD
DL	TBD
C5	TBD
Com # 10	TBD
B5 (ISO)	TBD
B5 (JIS)	TBD
Executive	TBD
Letter	TBD
A4	TBD
Legal 13"	TBD
Legal 14"	TBD
Universal/Custom	TBD

t6= The time between /TOP until Motor Main stops.

Paper Size	t6 (sec.)
Index Card	TBD
Postcard	TBD
Monarch	TBD
A5	TBD
Statement	TBD
DL	TBD
C5	TBD
Com # 10	TBD
B5 (ISO)	TBD
B5 (JIS)	TBD
Executive	TBD
Letter	TBD
A4	TBD
Legal 13"	TBD
Legal 14"	TBD
Universal/Custom	TBD

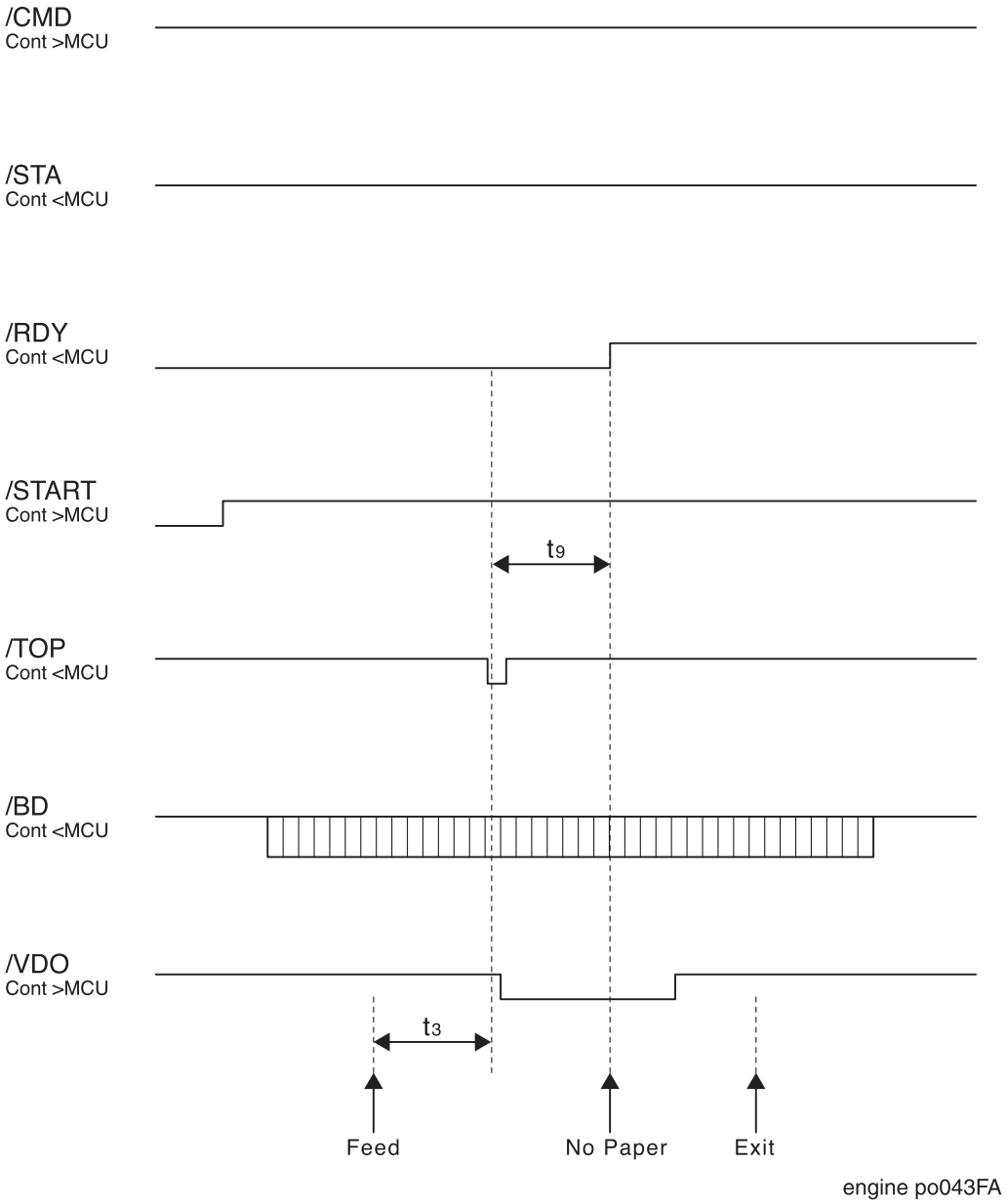
t7= The duration while Feed Status is "1".

Feeding Tray	t7 (sec.)
Main	TBD
Aux1(Middle)	TBD
Aux2 (Bottom)	TBD
MBF	TBD
Env.Feeder	TBD

Timing When an Error Occurs

1) Timing When the Printer Runs Out of Paper

When the MCU receives a signal from the Sensor Photo:No Pap 1, it sets /RDY High; t_8 seconds after paper feed begins. The Controller sends a Status Request to the MCU requesting an out-of-paper state.



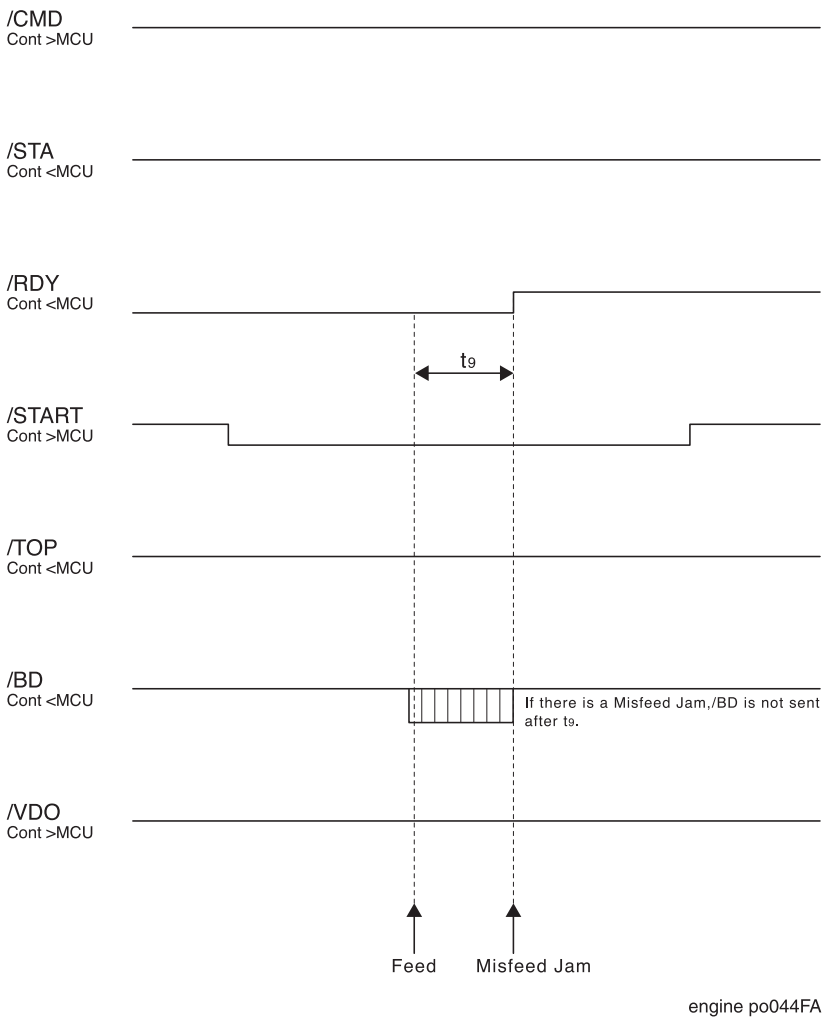
Timing When an Error Occurs Chart Values

t_8 = The time from when the MCU sets the TOP signal High after the last sheet is fed, to when the MCU notifies the Controller of the error. t_8 varies depending on the paper size.

Timing When an Error Occurs

2) Timing When Misfeed Jam Occurs

When misfeed is detected, MCU sets /RDY signal High, and keeps /TOP High.



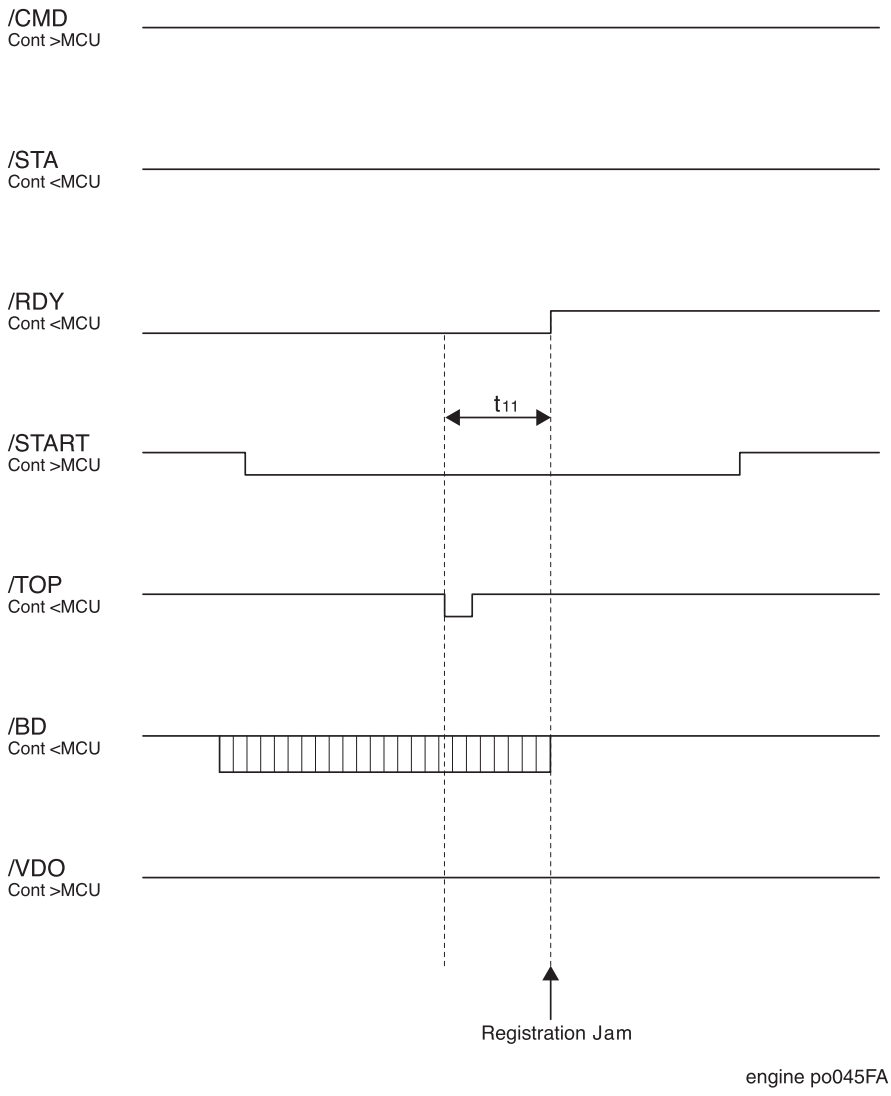
t9= Detection time of misfeed jam.

Feeding Tray	t9 (sec.)
Main	TBD
Aux1(Middle)	TBD
Aux2 (Bottom)	TBD
MBF	TBD
Env.Feeder	TBD

Timing When an Error Occurs

3) Timing When There is a Registration Jam

When a registration jam is detected, the MCU sets /RDY to High t_{10} seconds after sending /TOP. The MCU stops sending the /BD signal.



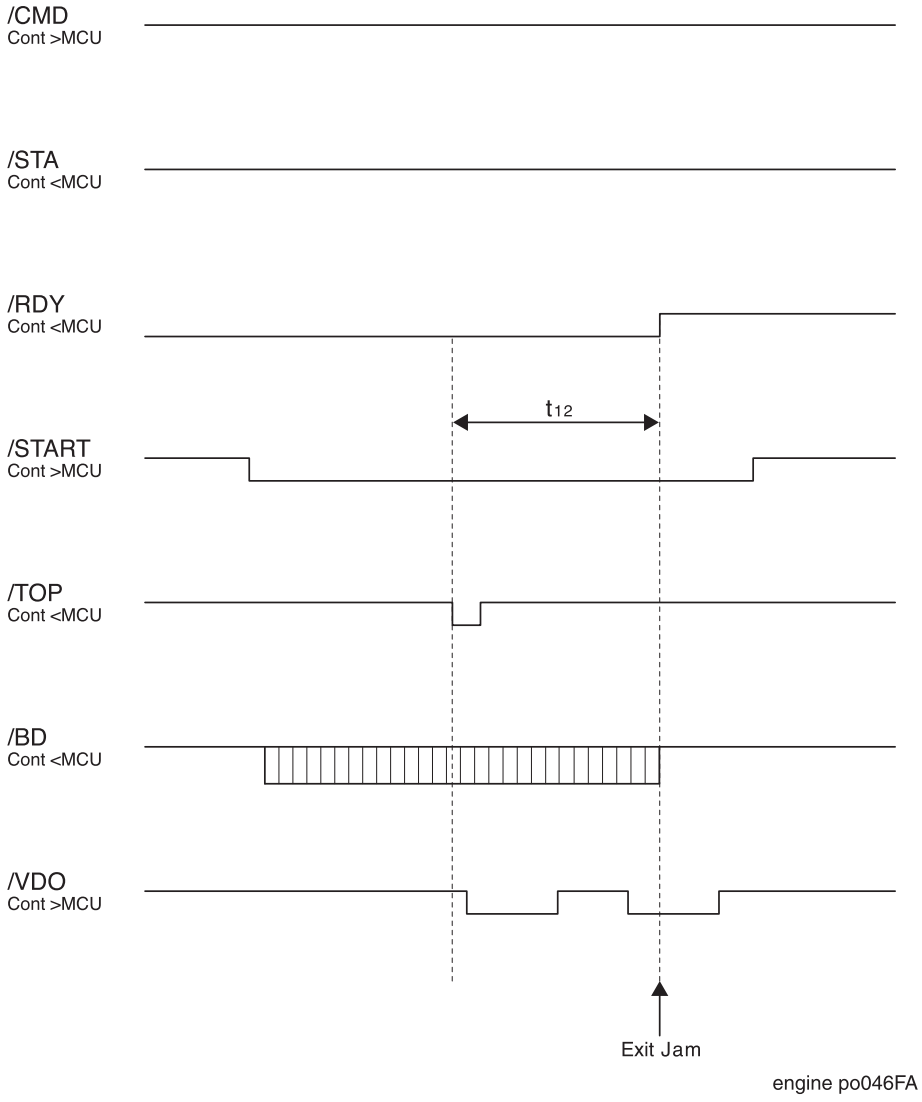
T10: The time from /TOP signal transmission until REG. Jam 1 occurrence

t10 (sec.)
TBD

Timing When an Error Occurs

4) Timing When There is an Exit Jam

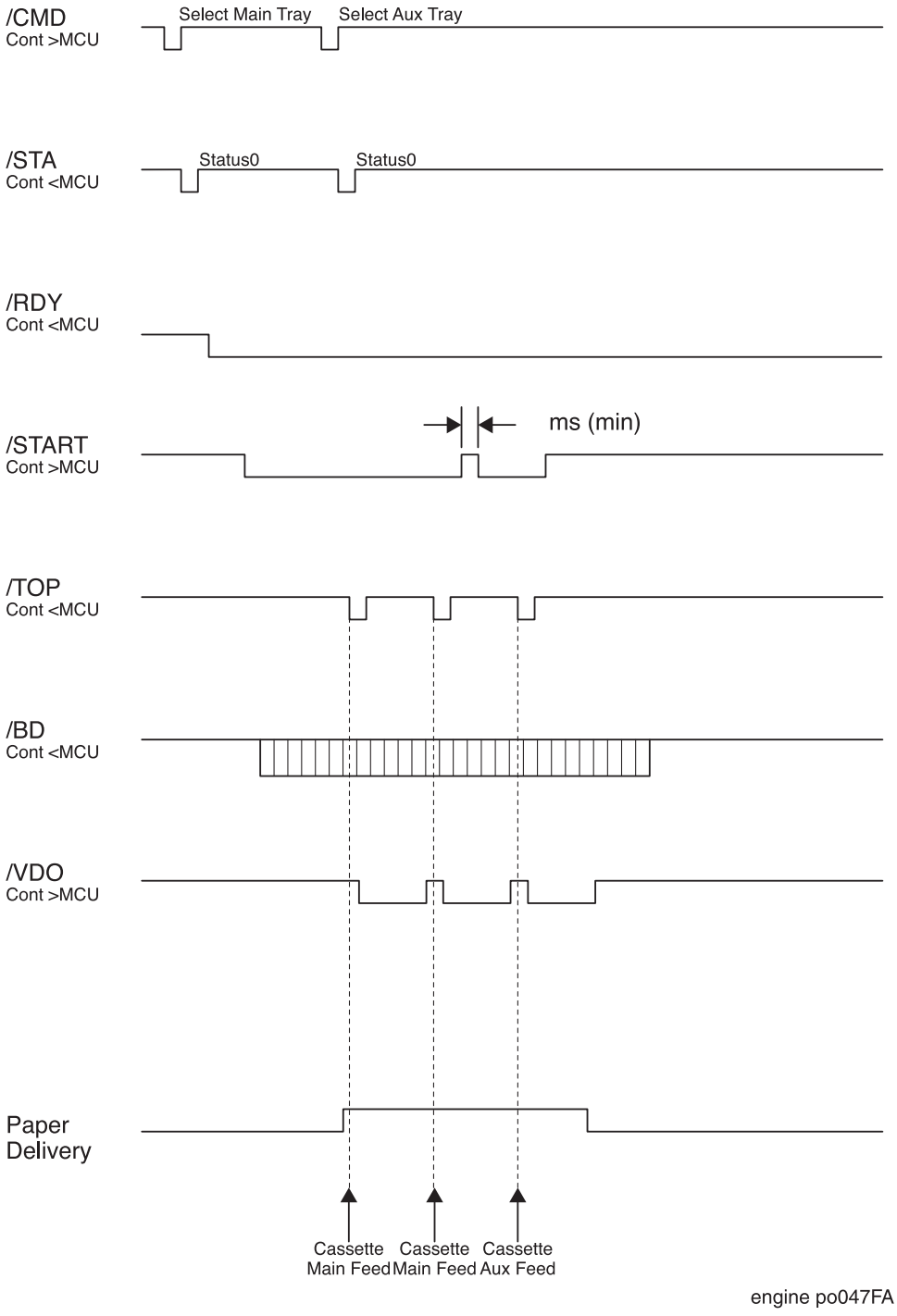
When an exit jam is detected, the MCU sets /RDY High t_{12} seconds after sending /TOP. The MCU stops sending the /BD signal.



Other Paper Feed Timing

1) Paper Feeder Switching During a Print Cycle

The Controller uses the SELECT TRAY command to select which paper feeder to use. The Controller then sets /START Low, then High, then back to Low to make the selection effective and to restart printing.



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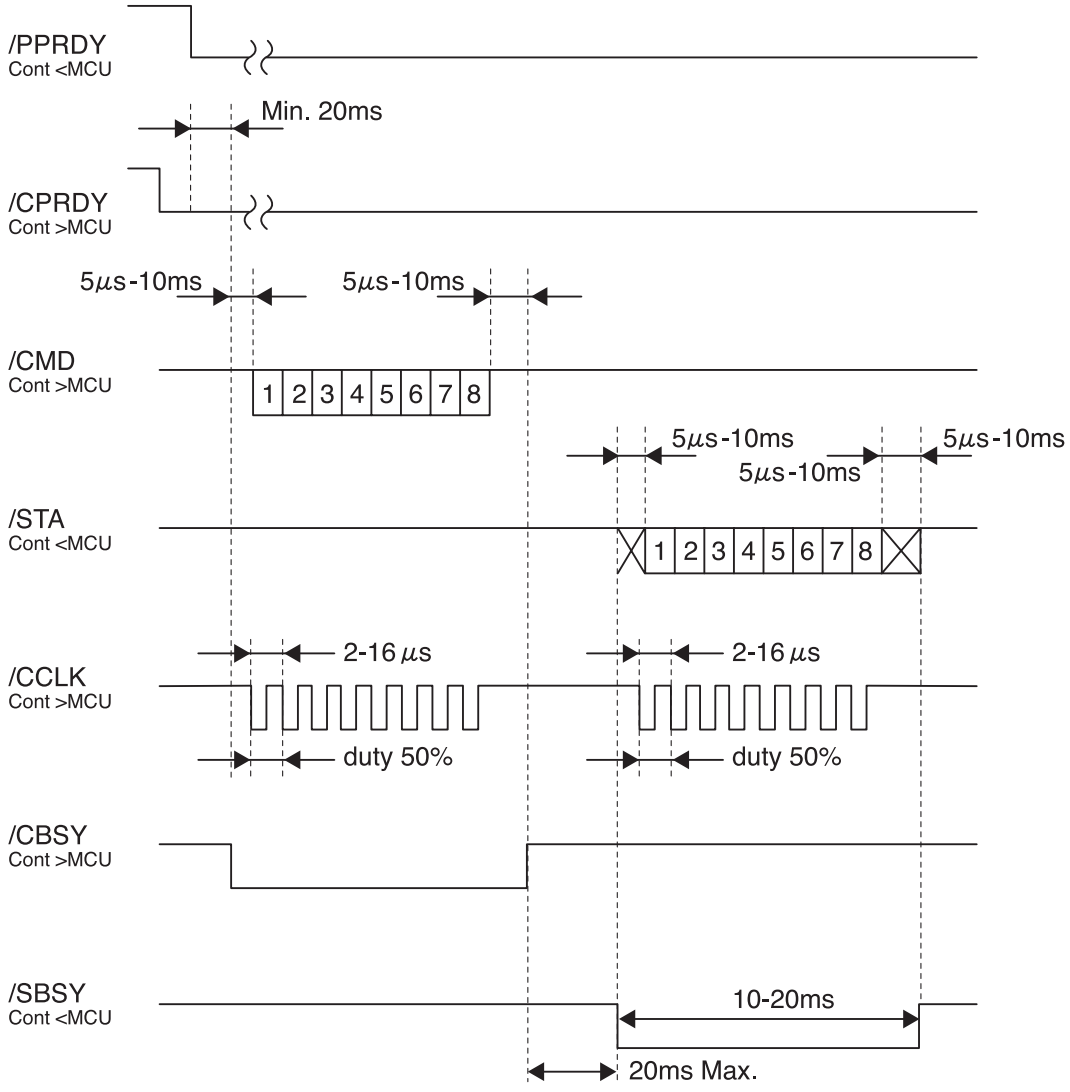
Command and Status Timing

The command/status timing charts are shown in below.



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Power Supplies

The LVPS (Low Voltage Power Supply)

The LVPS uses a resonance-type switching regulator. The LVPS supplies +24VDC, +5VDC, +3.3VDC (A), and +5VDC (B). The +5VDC (B) is labeled as 5V INTLK in the printer wiring diagrams.

The LVPS has built-in over current protection. If an excessive current begins to flow in the +5VDC(A) or +24VDC circuits, all DC supplies are shut down. If an excessive current begins to flow in the +5VDC (B) or +3.3VDC circuits, only the +24VDC supplies are shut down. Switch the power supply OFF, then ON again to reset the circuit after an over current shutdown.

The LVPS also supplies AC power to the Heat Rod. A circuit, controlled by the Heat ON signal from the MCU, switches power to the Heat Rod.

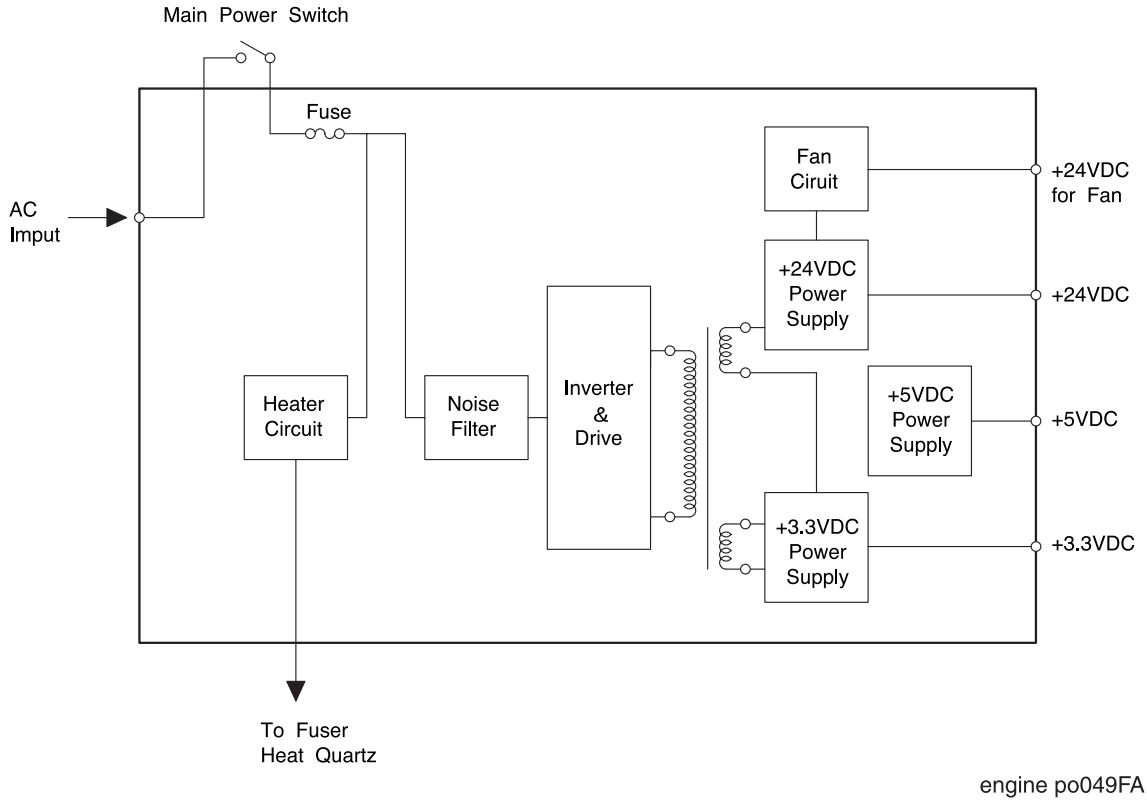


Figure 39. PWBA HKB PS Schematic Block Diagram

The HVPS (High Voltage Power Supply)

The HVPS supplies high voltages for the BCR, BTR, DB and DTS. The HVPS receives +24VDC input from the LVPS, along with nine control signals from the MCU.

The HVPS has built-in overcurrent protection. If an excessive current begins to flow in any of the four power supplies, all of the supplies are shut down. Switch the power supply OFF, then ON again to reset the circuit after an overcurrent shutdown.

Printer Controls

Paper Size Bit Configuration (STATUS 5)

Table H-3 shows the paper size regarding Main Tray.

PS5	PS4	PS3	PS2	PS1	PS0	HEX	Paper Size
0	0	0	0	0	0	0H	No Cassette installed
0	0	0	0	0	1	1H	A4
0	0	0	1	0	0	4H	Letter
0	0	1	0	0	1	9H	B5(JIS)
0	0	1	1	0	0	0CH	Legal 14"
0	0	1	1	0	1	0DH	Executive
0	0	1	1	1	0	0EH	A5
0	1	0	0	1	0	12H	Legal 13"
0	1	0	0	0	1	21H	Custom
1	1	1	1	1	1	33H	Unknown

Table H-3. Paper Size Bit Configuration

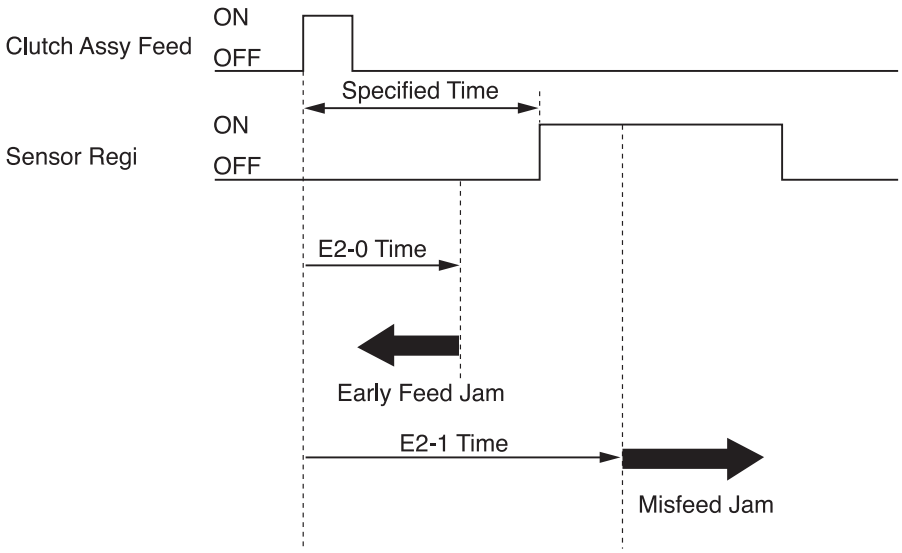
Paper Timing

During a print cycle, paper should move through the printer at a specific speed. A paper jam occurs if the paper travels too slow or too fast through the paper path. The following charts and tables show E2-0, E2-1, E3-1, E3-2, and E4-2 jam timing.

E2 Paper Jam Timing

E2-0 Specified Time is a time interval from Feed Solenoid actuation to just before Registration Sensor actuation. If the paper actuates the Registration Sensor before the E2-0 Specified Time, a "too soon" jam occurs, and the printer displays an E2 -0code.

E2-1 Specified Time is a time interval from Feed Solenoid actuation to just before Registration Sensor actuation. If the paper actuates the Registration Sensor after the E2-1 Specified Time, a "misfeed" jam occurs, and the printer displays an E2-1 code.



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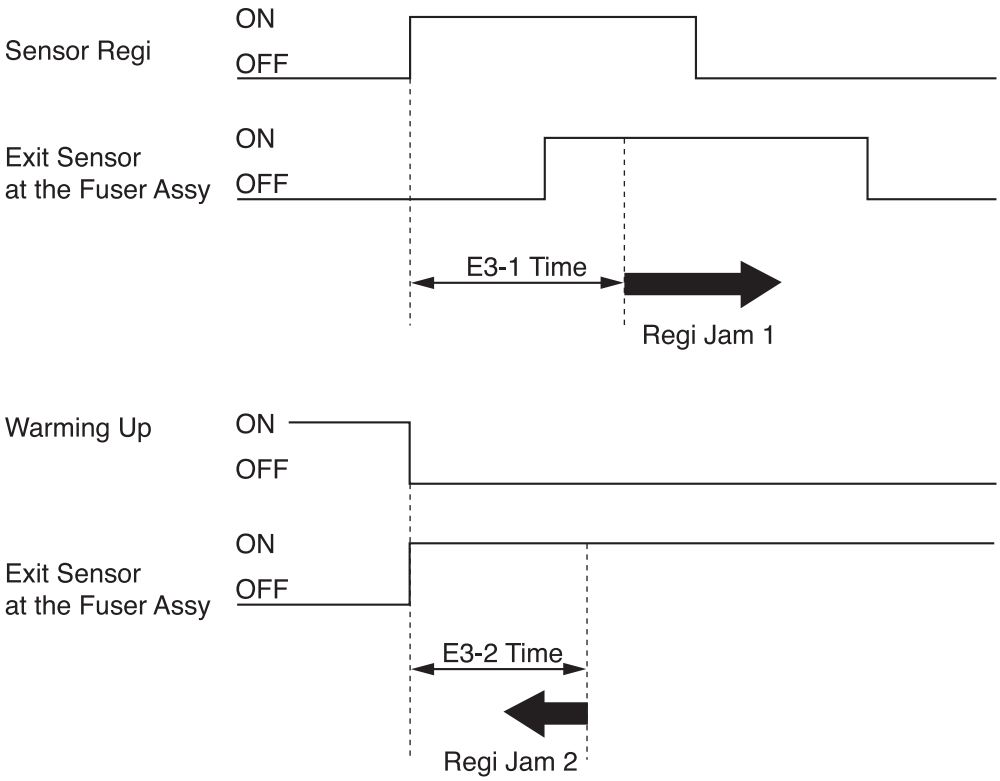
E3 Paper Jam Timing

E3-1 and E3-2 Specified Time are time interval from Sensor Photo:Regi to Exit Sensor of the Fuser Assy. If the paper does not actuate the Exit Sensor before the E3 Specified Time, a "Regi Jam" occurs, and the printer displays an E3-1 or E3-2 code.



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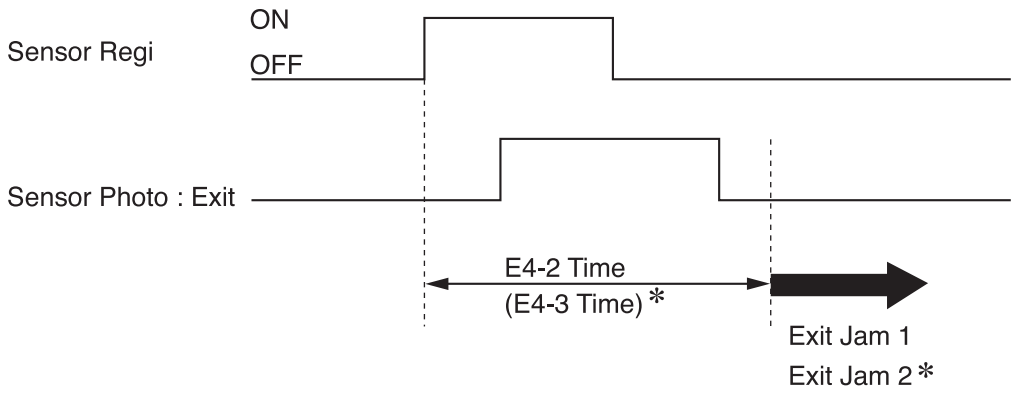
E4 Paper Jam Timing

E4-2 and E4-3 Specified Time are time interval from Sensor Photo:Regi to Sensor Photo: Exit's deactuation. If the paper does not deactuate the Sensor Photo:Exit before the E4's Specified Time, a "Exit Jam" occurs, and the printer displays an E4-2 or E4-3 code.



* : In the case for Universal or Custom Paper

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ROS Control

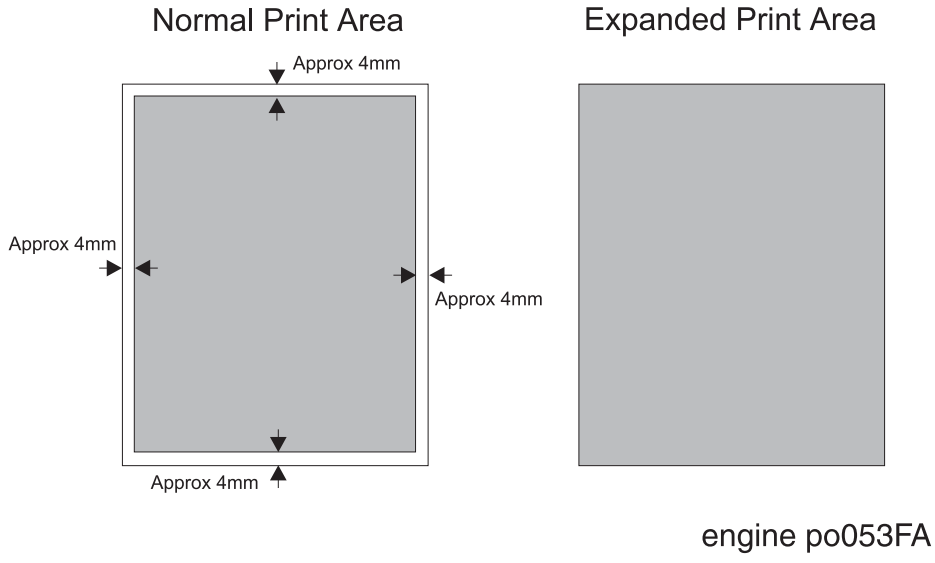
Warm-up

The ROS completes warm-up when the SOS signal intervals are shorter than the READY reference value, during three consecutive samplings of the SOS signal interval, and when the actual LD laser power reaches the value that was set in Configuration Code 2. The READY interval for the SOS signal is approximately 98% of the SOS interval when the ROS Motor is rotating at the rated speed of 277.41 ▪ s for 600 dpi and 138.71 ▪ s for 1200 dpi.

ROS Motor and LD Control in Various Printer Modes

Printer Mode	ROS Motor and LD Control
On-line Mode	The ROS Motor and the LD are both controlled by the Printer Controller.
Printing Test Mode	The ROS Motor is stopped. The LD is switched on only when SOS is detected
Diagnostic Mode	The ROS Motor and the LD are always on.
Configuration Mode	The ROS Motor is always on. The LD is switched on only when SOS is detected.

Printable Area



ROS Trouble (U2 Error Code)

There are three major causes of U2 errors.

- Warm-up failure

  SOS signal intervals are not shorter than the READY reference value, during three consecutive samplings of the SOS signal interval or within specified seconds after start of warm-up.

- ROS speed too low (Down Failure)

  SOS signal intervals are longer than the set Down Failure interval after completion of warm-up. The set Down Failure is a time interval corresponding to 90% of the rated ROS Motor speed of rotation.

- ROS speed too high (Overrun Failure)

  SOS signal intervals are shorter than the set Overrun Failure interval after completion of warm-up. The set Overrun Failure is a time interval corresponding to 102% of the rated ROS Motor speed of rotation.

Fuser Control

Fuser Temperature Control

The Thermistor monitors the temperature on the surface of the Heat Roll and compares that temperature with the rated temperature that was set in NVRAM. The Controller switches the Heat Rod on or off depending on how the actual temperature differs from the rated temperature.

The printer switches on the Heat Rod when the Fuser temperature lowers below the current control temperature (approximately 178 °C for the standard control temperature). The printer switches off the Heat Rod when the Fuser temperature rises above the current control temperature (approximately 180 °C for the standard control temperature).

Fuser Warm-up

Power to the Heat Rod is applied at the start of printer warm-up. Warm-up is complete when the Heat Roll reaches the current control Temperature. If the Fuser Temperature is below 100 °C at start of warm-up, then warm-up finishes when the Fuser temperature reaches "standby temperature", minus 10 °C.

Fuser Trouble (U4 Error Code)

There are five major causes of a U4 error.

- Warm-up failure
  Fuser warm-up does not complete within specified seconds after starting.

- Low Trouble temperature
  The Fuser temperature drops to the Low Trouble temperature (approximately current control temperature, minus approximately 25 °C).

- High Trouble temperature
  The Fuser temperature rises to the High Trouble temperature (approximately current control temperature, plus approximately 35 °C).

- The Thermistor circuit opened.

- STS failure
  The Heat Rod remains on for at least ten seconds after warm-up has completed.

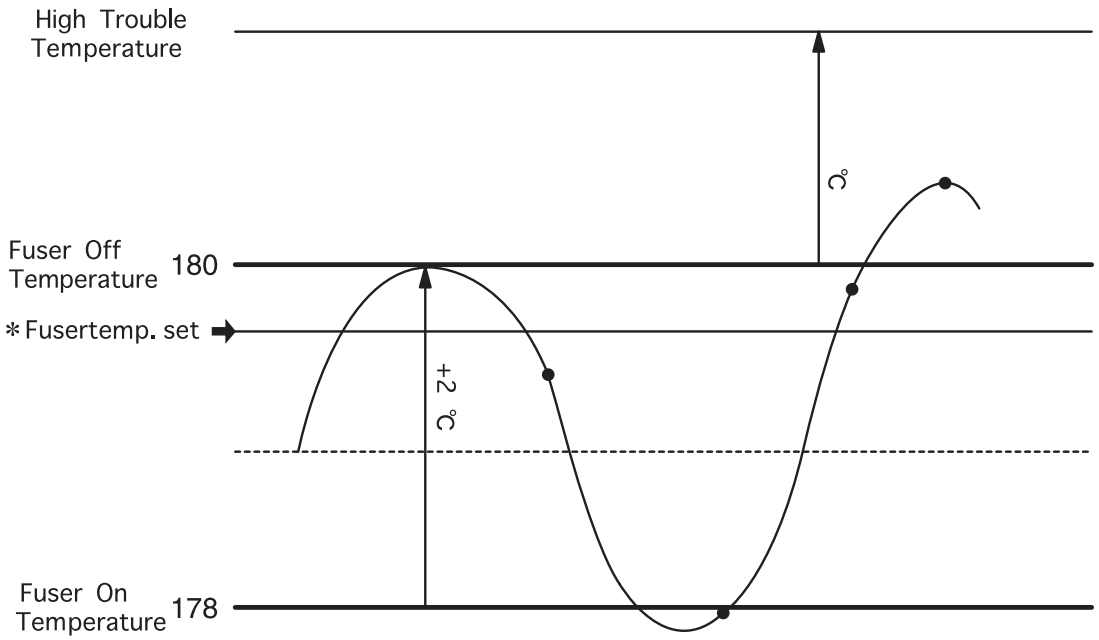
Power Shutoff to the Fuser

There are eight major reasons that the printer shuts off power to the Fuser .

- Fuser trouble (U4)
- Paper jam
- Open Cover Assy Front
- ROS failure (U2)
- CPU or NVRAM problem (U6)
- Motor Assy Main problem (U1)
- Fan problem (U5)
- FUSER PAUSE command issued

Fuser Temperature Cycling

Fuser temperature does not remain at a single, constant temperature. Fuser temperature follows a sine wave through a range of temperatures. FUSER TEMPERATURE CHECK (software diagnosis) displays the contents of NVRAM (FUSER TEMP.SET).



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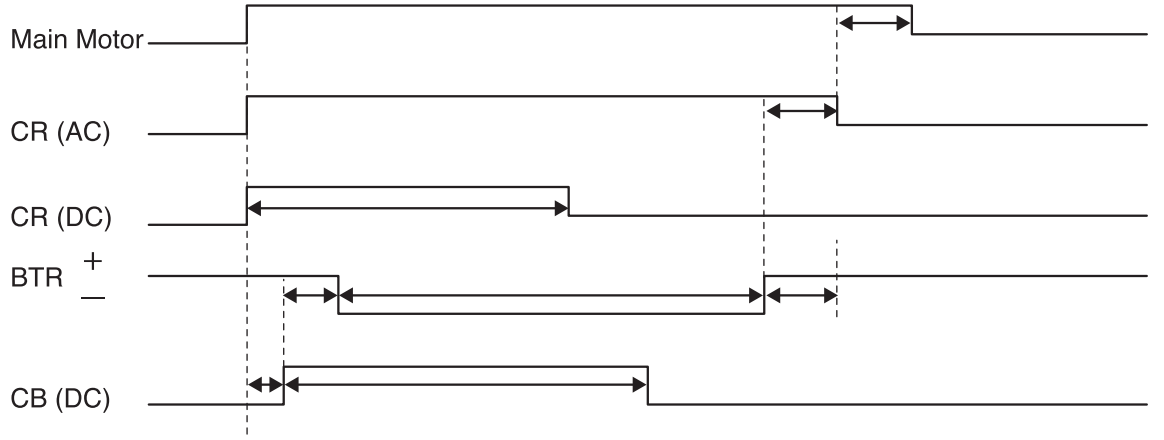
Temperature name	Temperature value
High Trouble Temperature	Approximately 215 ^{o}C (Standby temperature + approximately 35 ^{o}C)
Fuser Off Temperature	Fuser control temperature +/- 0 ^{o}C
Fuser control temperature	Standby temperature (180 ^{o}C)
	Running temperature (180 ^{o}C)
Fuser On Temperature	Fuser control temperature - 2 ^{o}C
Low Trouble Temperature	Approximately 155 ^{o}C (Standby temperature - approximately 25 ^{o}C)

Erase Cycle

The printer immediately interrupts a print cycle whenever the Cover Assy Front or Cover Rear are opened, there is a paper jam, a Paper Cassette is removed, or the printer power is switched off. When you remove the cause of the print cycle interruption, such as closing the covers, clearing the paper jam, reinstalling the Paper Cassette, or switching on printer power, the printer runs an Erase Cycle before continuing with the next print cycle.

During an Erase Cycle, the printer switches on the Motor Assy Main and the CR (AC and DC), BTR(-), and DB (DC) voltages. The Erase Cycle removes any developed image (toner) on the drum, and any latent image (electrical) on the drum. When the Erase Cycle finishes, the printer returns to normal mode and is ready to resume printing.



Fan Control

The printer switches between two Fan speeds.

- High Speed, when the Motor Assy Main is on.
- Low Speed, when the Motor Assy Main is off.

When printer power is switched on, or when an Interlock Switch is actuated (after being deactuated), the Fan runs at High Speed for one second, then switches to Low Speed.

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DB2 PWBA HKB PS <=> Fan Assy, Switch Assy I/L Front,
PWBA HKB 5VDC and PWB ESS 14-8
DB3 PWBA HKB26 MCU <=> PWBA HVPS <=> BTR, CRU and Fuser Assy 14-10
DB4 PWBA HKB26 MCU <=> Fuser Assy 14-13
DB5 PWBA HKB26 MCU <=> Sensor Photo:Exit and Switch Assy I/L Rear 14-15
DB6 PWBA HKB26 MCU <=> PWBA Size 1 <=> PWBA Feeder <=> Sensor Photo:Low Paper,
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DB7 PWBA HKB26 MCU <=> Motor Assy Main, Motor Assy Exit and Sensor Assy CRU 14-21
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Section 14: Interconnection Wiring Diagrams

This section of the manual contains a Master Wiring Diagram for the Asama printer. The Master Wiring Diagram shows the interconnections of the major subsystems within the printer. The remainder of this section divides the Master Wiring Diagram into nineteen individual diagram blocks (DB) to better illustrate the electrical relationships between components and assemblies within the printer. Each wire in the diagram blocks is tagged with a signal name, and each wire is terminated at both ends with a pin number.

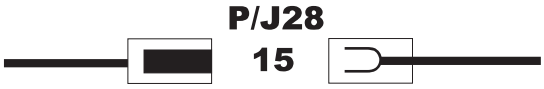
Wiring Diagram Notations

The wiring diagrams presented in this manual use the following circuit notations to describe components and signal paths within the printer.

A PLUG

A JACK

CONNECTION OF PIN 15 OF CONNECTORS P28 AND J28.



THE SIGNAL NAME OF A WIRE

THE VOLTAGE MEASURED WITH THE NEGATIVE PROBE OF THE METER ON SG

THE VOLTAGE VALUE OF A SIGNAL

/ = The voltage goes LOW when the signal is ON.

In this case, the HEAT signal is ON, so the normal voltage of 3.3VDC drops to 0VDC.

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SG SIGNAL GROUND

FG FRAME GROUND

RTN RETURN

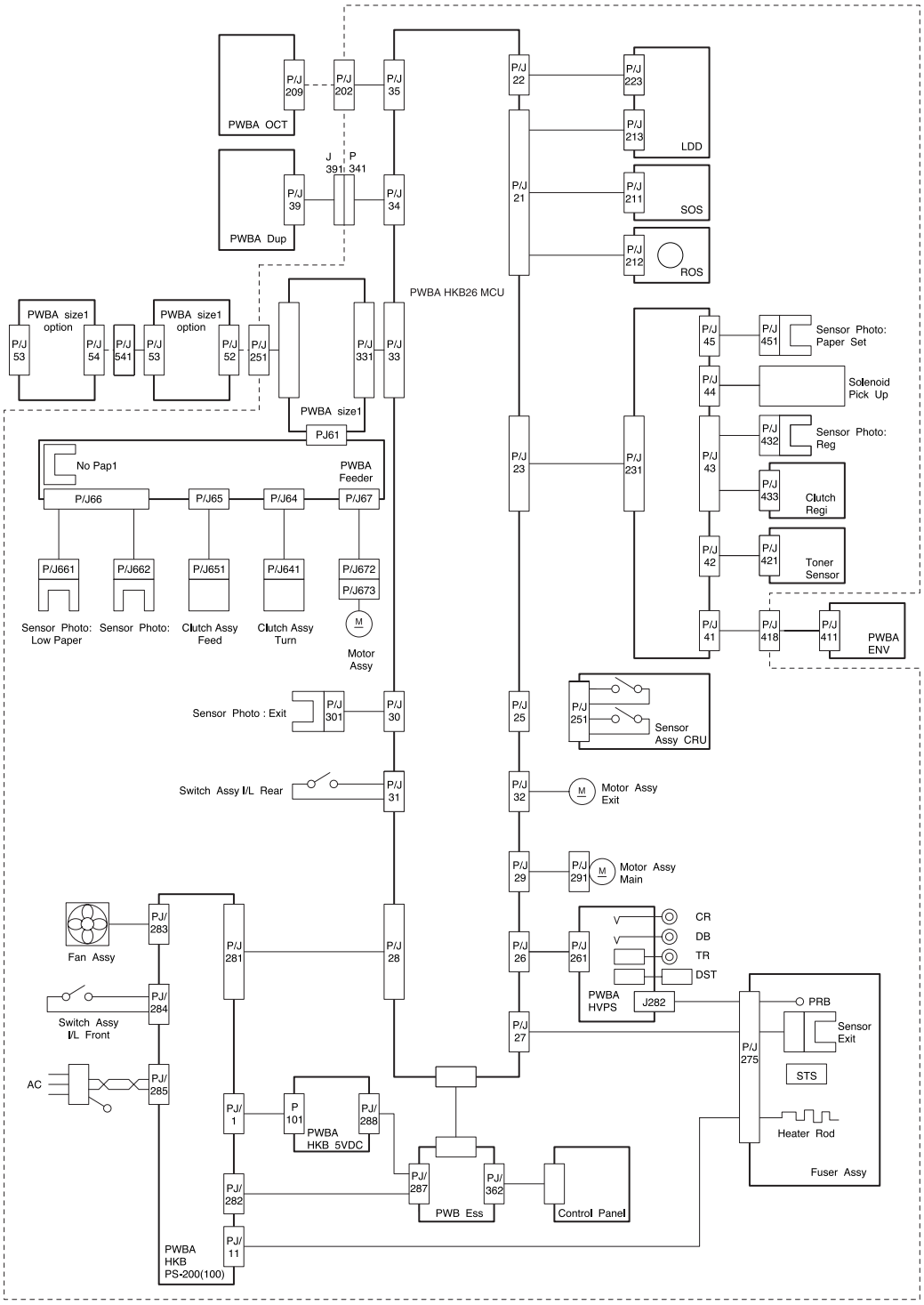
There is continuity between SG and RTN. Continuity between FG and SG depends on circuit specifications.

TTL TTL displayed in the HIGH level or LOW level columns of the signal tables indicate the signal is ECL_CMOS compatible.

HIGH is approx. 3.3 VDC

LOW is approx. 0 to 0.8 VDC

Master Wiring Diagram



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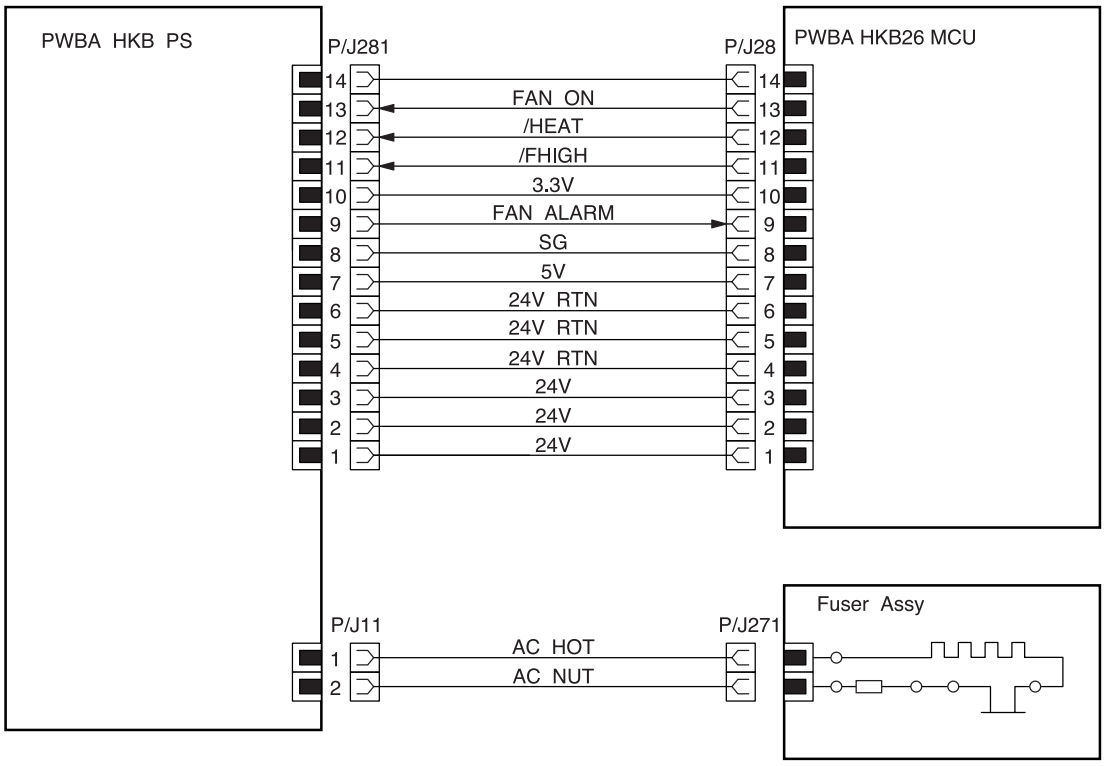
DB1 PWBA HKB26 MCU <=> PWBA HKB PS and Fuser Assy



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DB1 PWBA HKB26 MCU <=> PWBA HKB PS and Fuser Assy

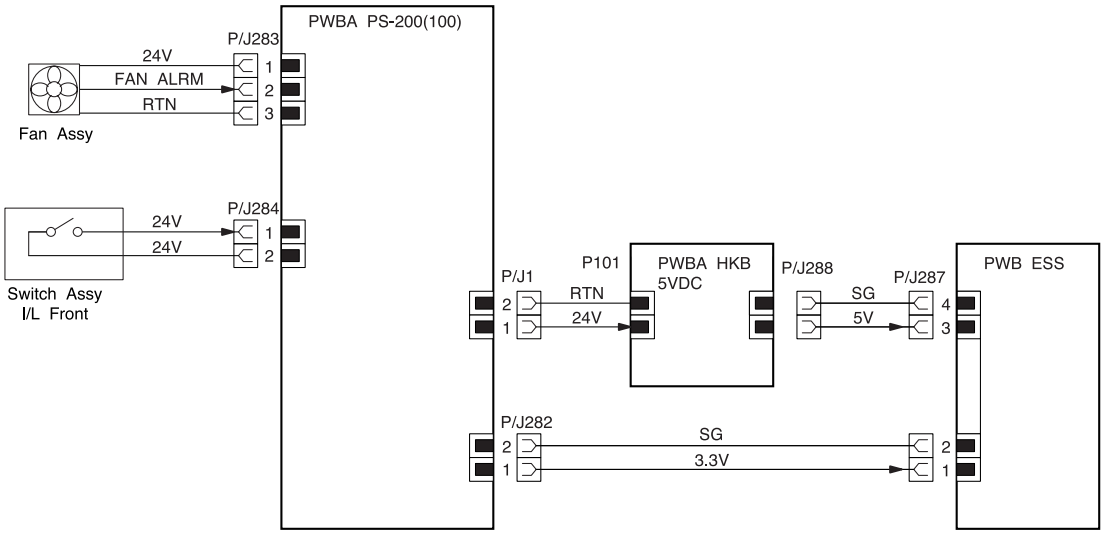
The following table shows pin numbers, and voltage levels for the PWBA HKB26 MCU <=> PWBA HKB PS:

P281	P28	Signal Name	Signal Direction L: LVPS, M:MCU	Trigger	HIGH Level	LOW Level
13	13	FAN ON	L <= M	-	24V	15V
12	12	/HEAT	L <= M	Level	3.3V	0V
11	11	/FHIGH	L <= M	Level	24V	0V
9	9	FAN ALARM	L => M	Level	3.3V	0V

The following table shows the signal names for the PWBA HKB26 MCU <=> PWBA HKB PS path:

Signal Name	Description
FAN ON	Fan drive power that drives the Fan Assy with 2 voltages, 24V for High speed and 5V for Low speed
/HEAT (TTL)	Fuser control signal to switch AC power to the Heat Rod on and off Low: ON, High: OFF
/FHIGH (24V)	Fan speed switching signal that switches the speed of rotation of the Fan Assy between High and Low Low: High speed, High: Low speed
FAN ALARM (TTL)	Fan monitor signal. Goes Low when the rotation of the Fan Assy is abnormal Low: Abnormal, High: Normal

DB2 PWBA PS-200(100) <=> Fan Assy, Switch Assy I/L Front, PWBA HKB 5VDC and PWB ESS



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DB2 PWBA HKB PS <=> Fan Assy, Switch Assy I/L Front, PWBA HKB 5VDC and PWB ESS

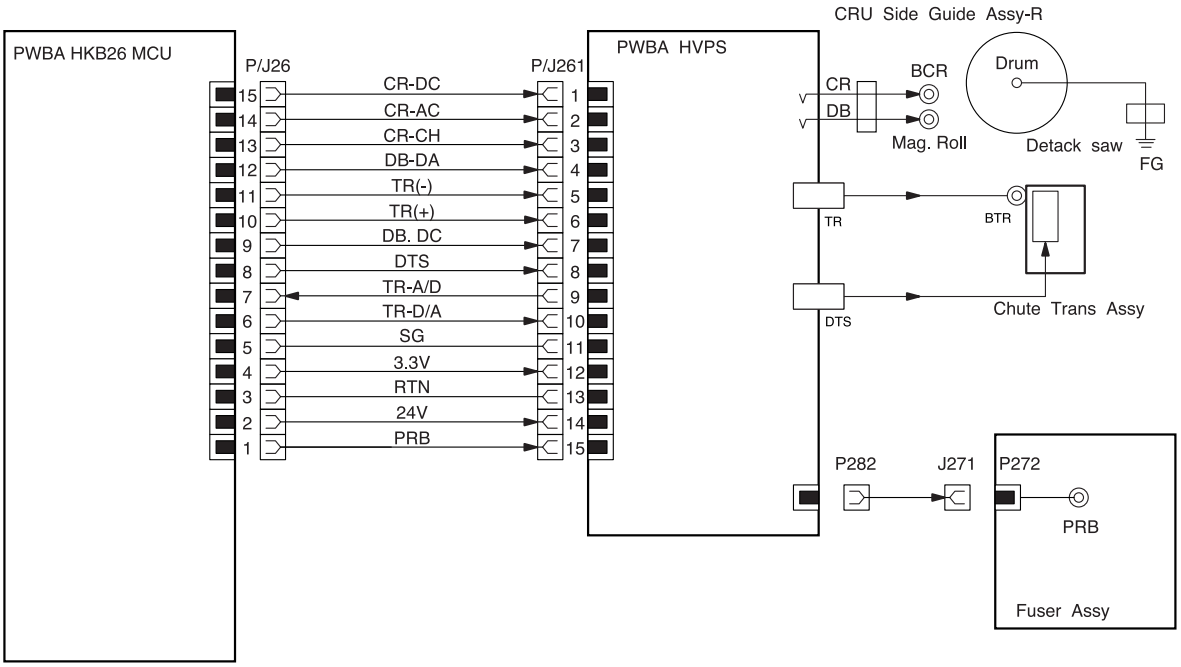
The following table shows the signal names for the PWBA HKB PS <=> Fan Assy path:

Signal Name	Description
FAN ALARM	Actuates the Cassette 1 Feed Solenoid (Normally LOW, and HIGH when paper is fed)

The following table shows pin numbers, and voltage levels for the PWBA HKB PS <=> Fan Assy path:

P283	Signal Name	Signal Direction P: PS-200, F: Fan	Trigger	HIGH Level	LOW Level
2	FAN ALARM	F -> P	Level	3.3V	0V

DB3 PWBA HKB26 MCU <=> PWBA HVPS <=> BTR, CRU, and Fuser Assy



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DB3 PWBA HKB26 MCU <=> PWBA HVPS <=> BTR, CRU, and Fuser Assy

The following table shows the signal names for the PWBA HKB26 MCU <=> PWBA HVPS path:

Signal Name	Description
CR-DC	Control signal to switch the Charge Voltage for DC component of the CR and the PBR on and off. Low: OFF, High: ON (applied charge voltage)
CR-AC	Constant-frequency pulse signal that provides the source of oscillation for generating the AC component of the CR
CR-CH	
DB-DA	Constant-frequency pulse signal that provides the source of oscillation for generating the AC component of the DB (Development Bias) in the HVPS
TR(-)	Transfer Voltage (-) to be applied onto BTR (Analog)
TR(+)	Transfer Voltage (+) to be applied onto BTR (Analog)
DB.DC	Control signal to select the Development Voltage for DC component (Analog)
DTS	Control signal to select the DTS Voltage (Analog)
TR-A/D	
TR-D/A	Control signal to select the TR(+) voltage (0 to 3.3VDC) as determined by the ATDVC (Analog)
PRB	Pressure Roll Bias to be applied on the Pressure Roll

The following table shows pin numbers, and voltage levels for the PWBA HKB26 MCU <=> PWBA HVPS path:

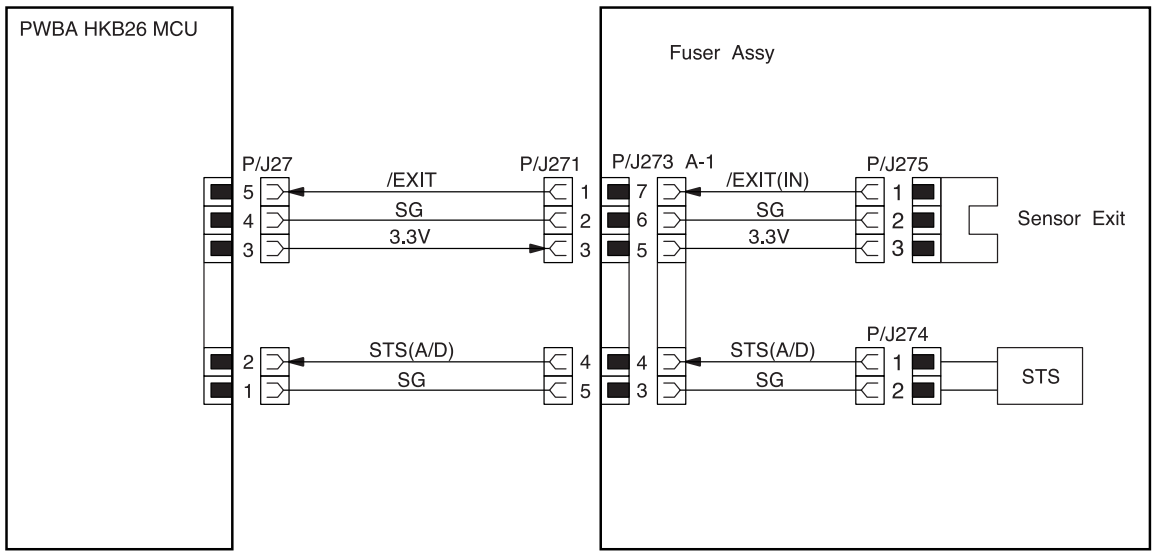
P26	P261	Signal Name	Signal Direction H:HVPS M: MCU	Trigger	HIGH Level	LOW Level	Note
15	1	CD-DC	M => H	Level	3.3V	0V	
14	2	CR-AC	M => H	-	-	-	Pulse
13	3	CR-CH	M => H				
12	4	DB-BA	M => H	-	-	-	Pulse
11	5	TR(-)	M => H	Level	-	-	Analog
10	6	TR(+)	M => H	Level	-	-	Analog
9	7	DB.DC	M => H	Level	-	-	Analog
8	8	DTS	M => H	Level	-	-	Analog
7	9	TR-A/D	M <= H	Level	-	-	Analog
6	10	TR-D/A	M => H	Level	-	-	Analog

DB3 PWBA HKB26 MCU <=> PWBA HVPS <=> BTR, CRU, and Fuser Assy

The following table shows the signal names for the PWBA HVPS <=> BTR, CRU, and Fuser Assy path:

Signal Name	Description
CR	HVPS output to the Magnet Roll
DB	HVPS output to the BCR
TR	HVPS output to the BTR (+DC in Transfer operation, and -DC when cleaning the BTR)
DTS	HVPS output to the DTS
PRB	HVPS output to the Pressure Roll

DB4 PWBA HKB26 MCU <=> Fuser Assy



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DB4 PWBA HKB26 MCU <=> Fuser Assy

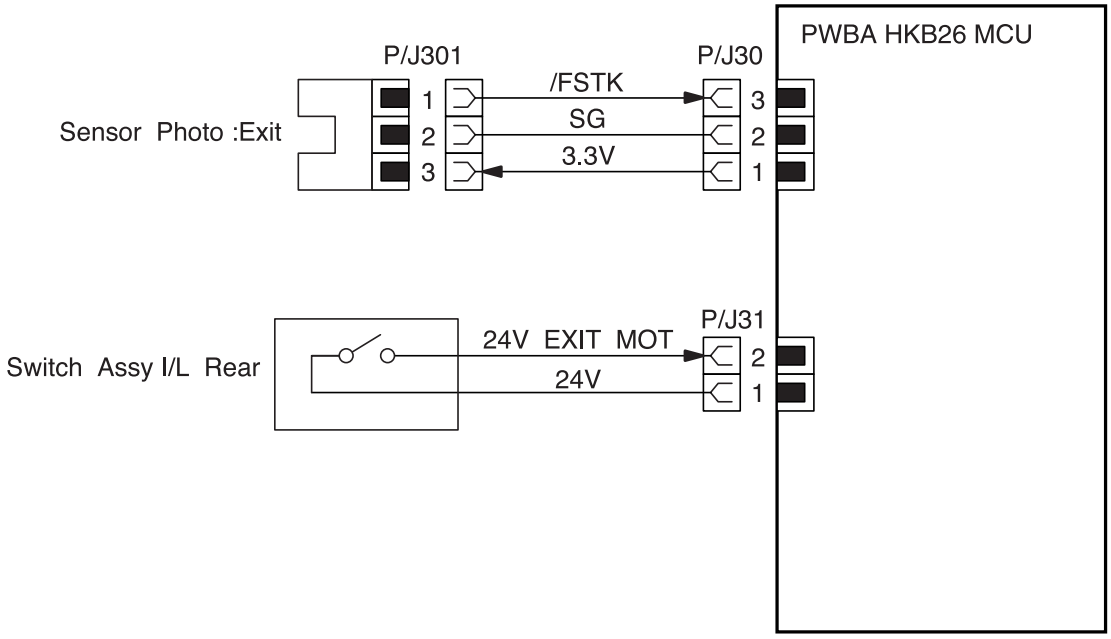
The following table shows the signal names for the PWBA HKB26 MCU <=> Fuser Assy path:

Signal Name	Description
/EXIT	Signal from the Sensor Exit. This signal is Low when the Sensor Exit is activated.
STS	Signal from the Temperature Sensor which monitors the Fuser Heat Roll temperature. (Analog)

The following table shows pin numbers, and voltage levels for the PWBA HKB26 MCU <=> Fuser Assy path:

P27	P271	Signal Name	Signal Direction F: Fuser M: MCU	Trigger	HIGH Level	LOW Level	Note
5	1	/EXIT	M <= F	Level	3.3V	0V	
2	4	STS (A/D)	M <= F	Level	-	-	Analog

DB5 PWBA HKB26 MCU <=> Sensor Photo:Exit, and Switch Assy I/L Rear



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DB5 PWBA HKB26 MCU <=> Sensor Photo:Exit, and Switch Assy I/L Rear

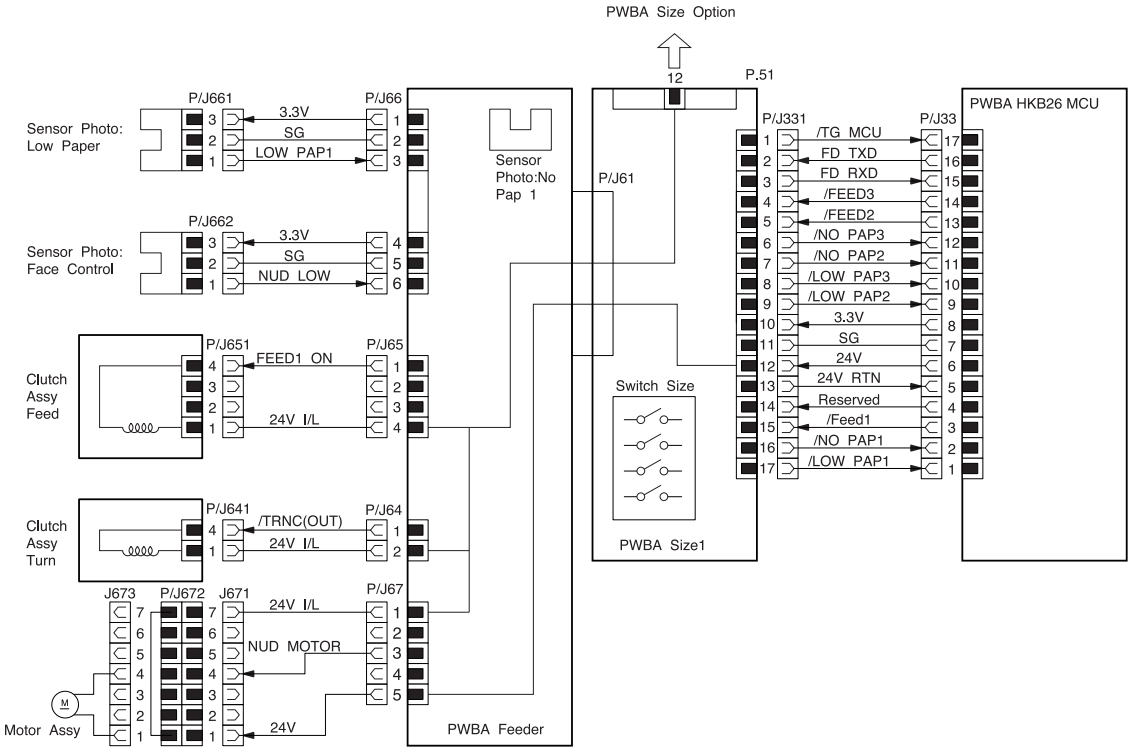
The following table shows the signal names for the PWBA HKB26 MCU <=> Sensor Photo:Exit, and Switch Assy I/L Rear path:

Signal Name	Description
/FSTK	Signal from the Sensor Photo: Full Stack. This signal is Low when the Sensor Photo:Full Stack is activated.
24V EXIT MOT	Signal from the Switch Assy I/L Rear. Goes Low when the Cover Rear is open and breaks the 24VDC circuit for the Motor Assy Exit.

The following table shows pin numbers, and voltage levels for the PWBA HKB26 MCU <=> Fuser Assy path:

P30	P301	Signal Name	Signal Direction E: Sensor Photo:Exit, Switch Assy I/L Rear, M: MCU	Trigger	HIGH Level	LOW Level
3	1	/FSTK	E => M	Level	3.3V	0V
2	-	24V EXIT MOT	E => M	Level	24V	0V

DB6 PWBA HKB26 MCU <=> PWBA Size 1 <=> PWBA Feeder <=> Sensor Photo:Low Paper, Sensor Photo:Face Control, Clutch Assy Feed, Clutch Assy Turn and Motor Assy



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DB6 PWBA HKB26 MCU <=> PWBA Size 1 <=> PWBA Feeder <=> Sensor Photo:Low Paper, Sensor Photo:Face Control, Clutch Assy Feed, Clutch Assy Turn and Motor Assy

The following table shows the signal names for the PWBA HKB26 MCU <=> PWBA Size 1 path:

Signal Name	Description
/TG MCU	Option Feeder check signal which is transferred from the PWBA HKB26 MCU
FD TXD	Control data which is transferred from the PWBA HKB26 MCU
FD RXD	Received data from the Feeder
/FEED 3	Feed control signal for the Feeder 3. The Clutch Assy Feed and the clutch Assy Turn are activated when this signal goes Low.
/FEED 2	Feed control signal for the Feeder 2. The Clutch Assy Feed and the clutch Assy Turn are activated when this signal goes Low.
/NO PAP 3	Signal from the Sensor Photo:No Pap 3 (equipped on the Option Feeder 3). This signal is Low when the Sensor Photo:No Pap 3 is activated.
/NO PAP 2	Signal from the Sensor Photo:No Pap 2 (equipped on the Option Feeder 2). This signal is Low when the Sensor Photo:No Pap 3 is activated.
/LOW PAP 3	Signal from the Sensor Photo: Low Paper 3 (equipped on the Option Feeder 3).This signal is Low when the Sensor Photo:Low Paper 3 is activated.
/LOW PAP 2	Signal from the Sensor Photo: Low Paper 2 (equipped on the Option Feeder 2).This signal is Low when the Sensor Photo:Low Paper 3 is activated.
/FEED 1	Feed control signal for the Feeder 1. The Clutch Assy Feed and the clutch Assy Turn are activated when this signal goes Low.
/NO PAP 1	Signal from the Sensor Photo:No Pap 1 (equipped on the Feeder). This signal is Low when the Sensor Photo:No Pap 1 is activated.
/LOW PAP 1	Signal from the Sensor Photo: Low Paper (equipped on the Feeder).This signal is Low when the Sensor Photo:Low Paper is activated.

DB6 PWBA HKB26 MCU <=> PWBA Size 1 <=> PWBA Feeder <=> Sensor Photo:Low Paper, Sensor Photo:Face Control, Clutch Assy Feed, Clutch Assy Turn and Motor Assy

The following table shows signal names and output levels for the PWBA HKB26 MCU <=> PWBA Size 1 path:

P33	P331	Signal Name	Signal Direction P: PWBA Size 1 M: MCU	Trigger	HIGH Level	LOW Level	Note
17	1	/TG	P <= M	Level	3.3V	0V	
16	2	FD TXD	P <= M	Level	3.3V	0V	
15	3	FD RXD	P => M	Level	3.3V	0V	
14	4	/FEED 3	P <= M	Level	3.3V	0V	
13	5	/FEED 2	P <= M	Level	3.3V	0V	
12	6	/NO PAP 3	P => M	Level	3.3V	0V	
11	7	/NO PAP 2	P => M	Level	3.3V	0V	
10	8	/LOW PAP 3	P => M	Level	3.3V	0V	
9	9	/LOW PAP 2	P => M	Level	3.3V	0V	
3	15	/FEED 1	P <= M	Level	3.3V	0V	
2	16	/NO PAP 1	P => M	Level	3.3V	0V	
1	17	/LOW PAP 1	P => M	Level	3.3V	0V	

DB6 PWBA HKB26 MCU <=> PWBA Size 1 <=> PWBA Feeder <=> Sensor Photo:Low Paper, Sensor Photo:Face Control, Clutch Assy Feed, Clutch Assy Turn and Motor Assy

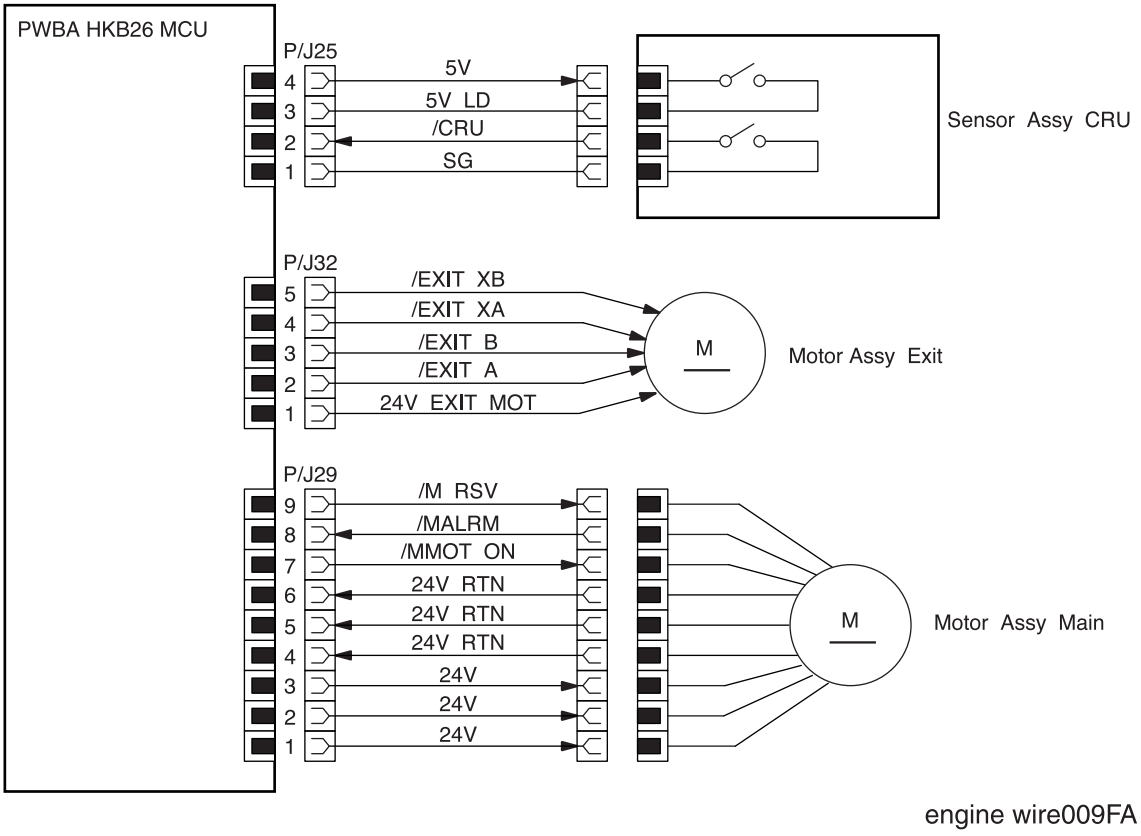
The following table shows the signal names for the PWBA Feeder <=> Sensor Photo:Low Paper, Sensor Photo:Face Control, Clutch Assy Feed, Clutch Assy Turn and Motor Assy path:

Signal Name	Description
LOW PAP 1	Signal from the Sensor Photo:Low Paper. This signal is Low when the Sensor Photo:Low paper is activated.
FEED 1 ON	Control signal which actuates the Clutch Assy Feed.
/TRNC (OUT)	Control signal which actuates the Clutch Assy turn. The Clutch Assy Turn is interlocked with the Clutch Assy Feed.
NUD MOTOR	Control signal which turns on the motor Assy.
24V I/L	Interlock signal which related with the all clutches and motors equipped on the PWBA Feeder.

The following table shows signal names and output levels for the PWBA Feeder <=> Sensor Photo:Low Paper, Sensor Photo:Face Control, Clutch Assy Feed, Clutch Assy Turn and Motor Assy path:

Pin	Pin	Pin	Signal Name	Signal Direction PF: PWBA Feeder, MT: Motor Assy CT: Clutch Assy Turn CF: Clutch Assy Feed F:SNS (Face Control) LP: SNS(Low Paper)	Trigger	HIGH Level	LOW Level
P66-3	P661-1	-	LOW PAP 1	LP => PF	Level	3.3V	0V
P66-6	P662-1	-	NUD LOW	F => PF	Level	3.3V	0V
P65-1	P651-4	-	FEED 1 ON	CF <= PF	Level	24V	0V
P65-4	P651-1	-	24V I/L	CF => PF	Level	24V	0V
P64-1	P641-4	-	/TRNC(OUT)	CT <= PF	Level	24V	0V
P67-1	P672-7	J673-1	24V I/L	MT => PF	Level	24V	0V
P67-3	P672-4	J673-4	NUD MOTOR	MT <= PF	Level	3.3V	0V

DB7 PWBA HKB26 MCU <=> Motor Assy Main, Motor Assy Exit and Sensor Assy CRU



DB7 PWBA HKB26 MCU <=> Motor Assy Main, Motor Assy Exit and Sensor Assy CRU

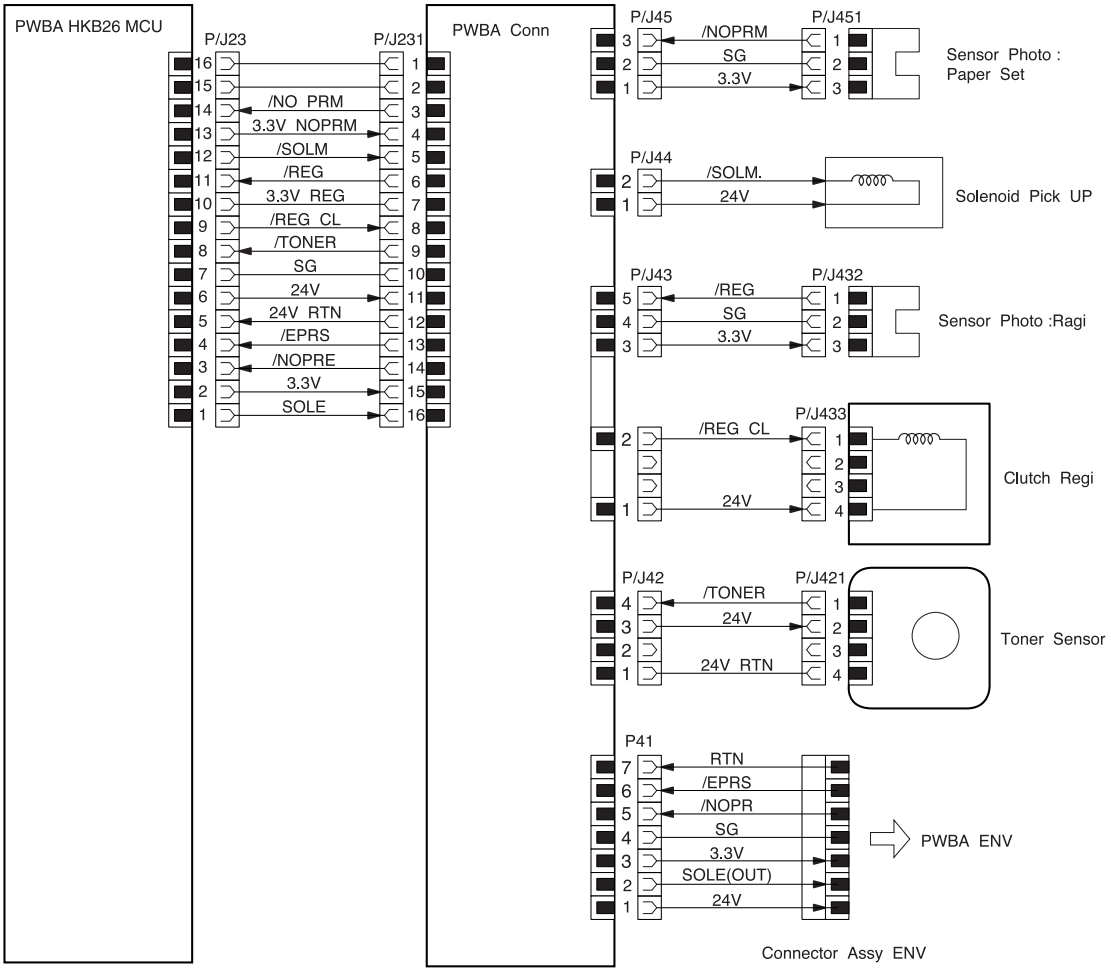
The following table shows the signal names for the PWBA HKB26 MCU <=> Motor Assy Main, Motor Assy Exit and Sensor Assy CRU path:

Signal Name	Description
5VLD	+5V power source to the Laser Diode (0V when the CRU is not in place.)
/CRU	Signal which activates the 5VLD circuit (0V when the CRU is not in place)
/EXIT XB	Phase XB drive signal for the stepping motor (LOW when driving, and High when not driving)
/EXIT XA	Phase XA drive signal for the stepping motor (LOW when driving, and High when not driving)
/EXIT B	Phase B drive signal for the stepping motor (LOW when driving, and High when not driving)
/EXIT A	Phase A drive signal for the stepping motor (LOW when driving, and High when not driving)
/M RSV	
/MALRM	Main motor monitor signal. Goes Low when the rotation of the Motor Assy Main is abnormal.
/MMOT ON	Main motor control signal to turn the Motor Assy Main on and off.

The following table shows signal names and output levels for the PWBA HKB26 MCU <=> Motor Assy Main, Motor Assy Exit and Sensor Assy CRU path:

Pin	Signal Name	Signal Direction C: Censor Assy CRU, ME: Motor Assy Exit, MM: Motor Assy Main M: MCU	Trigger	HIGH Level	LOW Level
P25-3	5V LD	C => M	Level	5V	0V
P25-2	/CRU	C => M	Level	5V	0V
P32-5	/EXIT XB	ME <= M	Level	24V	0V
P32-4	/EXIT XA	ME <= M	Level	24V	0V
P32-3	/EXIT B	ME <= M	Level	24V	0V
P32-2	/EXIT A	ME <= M	Level	24V	0V
P29-9	/M RSV	MM <= M	Level	3.3V	0V
P29-8	/MALARM	MM => M	Level	3.3V	0V
P29-7	/MMOT ON	MM <= M	Level	3.3V	0V

DB8 PWBA HKB26 MCU <=> PWBA Conn <=> Sensor Photo:Paper Set, Sensor Photo:Regi, Clutch Regi, Toner Sensor, Solenoid Pick Up



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DB8 PWBA HKB26 MCU <=> PWBA Conn <=> Sensor Photo:Paper Set, Sensor Photo:Regi, Clutch Regi, Toner Sensor, Solenoid Pick Up

The following table shows the signal names for the PWBA HKB26 MCU <=> PWBA Conn path:

Signal Name	Description
/NO PRM	Signal from the Sensor Photo:Paper Set. This signal is Low when the Sensor Photo:Paper Set is activated.
/SOLM	Control signal which activates the Solenoid Pick Up
/REG	Signal from the Sensor Photo:Regi. This signal is Low when the Sensor Photo:Regi is activated.
/REG CL	Control signal which activates the Clutch Regi
/TONER	Signal from the Toner Sensor. This signal is Low when the Toner Sensor is activated.
/EPRS	Signal from the Sensor Assy Exit ENV equipped on the ENV. This signal is Low when the Sensor Assy Exit ENV is activated.
/NOPER	Signal from the Sensor Photo:No Paper equipped on the ENV. This signal is Low when the Sensor Photo:No Paper is activated.
SOLE	Control signal which activate the Clutch Elec equipped on the ENV

The following table shows pin numbers, and voltage levels for the PWBA HKB26 MCU <=> PWBA Conn path:

P23	P231	Signal Name	Signal Direction M: MCU CN: PWBA Conn	Trigger	HIGH Level	LOW Level
14	3	/NOPRM	M <= CN	Level	3.3V	0V
12	5	/SOLM	M => CN	Level	3.3V	0V
11	6	/REG	M <= CN	Level	3.3V	0V
9	8	/REG CL	M => CN	Level	24V	0V
8	9	/TONER	M <= CN	Level	3.3V	0V
4	13	/EPRS	M <= CN	Level	3.3V	0V
3	15	/NOPRE	M <= CN	Level	3.3V	0V
1	16	SOLE	M => CN	Level	24V	0V

DB8 PWBA HKB26 MCU <=> PWBA Conn <=> Sensor Photo:Paper Set, Sensor Photo:Regi, Clutch Regi, Toner Sensor, Solenoid Pick Up

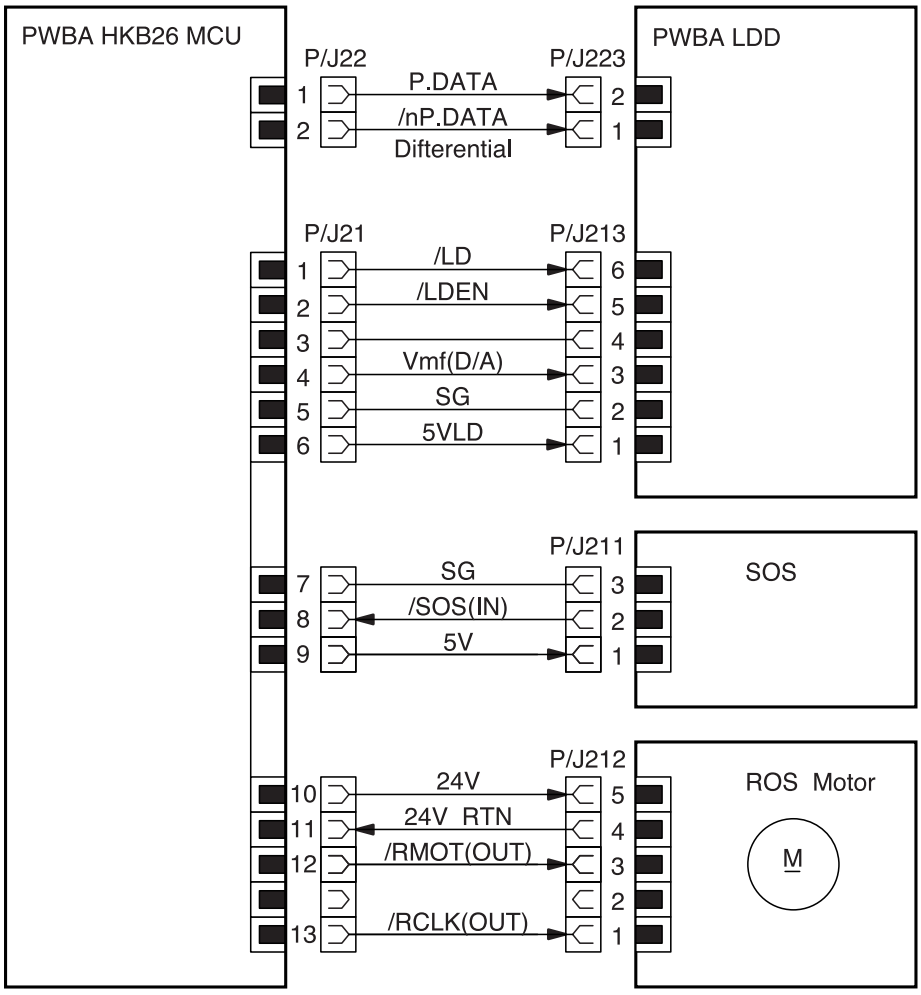
The following table shows the signal names for the PWBA Conn <=> Sensor Photo:Paper Set, Sensor Photo:Regi, Clutch Regi, Toner Sensor, Solenoid Pick Up path:

Signal Name	Description
/NO PRM	Signal from the Sensor Photo:Paper Set. This signal is Low when the Sensor Photo:Paper Set is activated.
/SOLM	Control signal which activates the Solenoid Pick Up
/REG	Signal from the Sensor Photo:Regi. This signal is Low when the Sensor Photo:Regi is activated.
/REG CL	Control signal which activates the Clutch Regi
/TONER	Signal from the Toner Sensor. This signal is Low when the Toner Sensor is activated.
/EPRS	Signal from the Sensor Assy Exit ENV equipped on the ENV. This signal is Low when the Sensor Assy Exit ENV is activated.
/NOPER	Signal from the Sensor Photo:No Paper equipped on the ENV. This signal is Low when the Sensor Photo:No Paper is activated.
SOLE	Control signal which activate the Clutch Elec equipped on the ENV

The following table shows pin numbers, and voltage levels for the PWBA Conn <=> Sensor Photo:Paper Set, Sensor Photo:Regi, Clutch Regi, Toner Sensor, Solenoid Pick Up path:

Pin	Pin	Signal Name	Signal Direction CN: PWBA Conn SP: SNS:Paper Set S: Solenoid Pick Up SR: SNS:Regi CR: Clutch Regi TS: Toner Sensor EVN: PWBA ENV	Trigger	HIGH Level	LOW Level
P45-3	P451-1	/NOPRM	CN <= PS	Level	3.3V	0V
P44-2	-	/SOLM	CN => S	Level	24V	0V
P43-5	P432-1	/REG	CN <= SR	Level	3.3V	0V
P43-2	P433-1	/REG CL	CN => CR	Level	24V	0V
P42-4	P421-1	/TONER	CN <= TS	Level	3.3V	0V
P41-6	P411-2	/EPRS	CN <= ENV	Level	3.3V	0V
P41-5	P411-3	/NOPRE	CN <= ENV	Level	3.3V	0V
P41-2	P411-6	SOLE	CN <= ENV	Level	24V	0V

DB9 PWBA HKB26 MCU <=> ROS Assy



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DB9 PWBA HKB26 MCU <=> ROS Assy

The following table shows the signal names for the Fuser PWBA HKB26 MCU <=> ROS Assy path:

Signal Name	Description
P.DATA	Print Image Data
/nP.DATA	Print Image Data
/LD	Control signal which determines the drive voltage for the Laser Diode.
/LDEN	Control signal which determines the drive voltage for the Laser Diode.
Vmf(D/A)	Control signal for the Laser Diode
/SOS(IN)	Synchronization signal generated by the PWBA SOS which indicates the start of each scan.
5VLD	+5V power source to the Laser Diode (0V when the Cover Assy Front is open or the CRU is not in place.)
/RMOT(OUT)	Scanner Motor Control signal which switches the ROS Motor on and off Low: ON, High: OFF
/RCLK	Synchronization signal for the ROS Motor

The following table shows pin numbers, and voltage levels for the PWBA HKB26 MCU <=> ROS Assy path:

Pin	Pin	Signal Name	Signal Direction L: LDD, S: SOS, R: ROS, M: MCU	Trigger	HIGH Level	LOW Level	Note
P22-1	P223-2	P.DATA	M => L	Level	3.3V	0V	
P22-2	P223-1	/mP.DATA	M => L	Level	3.3V	0V	
P21-1	P213-6	/LD	M => L	Level	-	-	Analog
P21-2	P213-5	/LDEN	M => L	Level	-	-	Analog
P21-4	P213-3	Vmf(D/A)	M => L	Level	-	-	Analog
P21-6	P213-1	5VLD	M => L	Level	5V	0V	
P21-8	P211-2	/SOS(IN)	M <= S	Level	TTL	TTL	
P21-12	P212-3	/RMOT(OUT)	M => R	Level	3.3V	0V	
P21-13	P212-1	/RCLN(OUT)	M => R	-	-	-	Pulse

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Section - 15 Printer Specifications

General Specifications

Category	Specification
Printing method	Electro-photographic system (roller charging, single component magnetic toner development)
Exposure method	Semiconductor Laser Beam Scanning
Laser specifications	Class 1 Laser Product Class 3B Laser, rated at 5mW output @ 780nm
Resolution	600/1200 dots per inch (dpi), switchable at full engine speed.
Fuser method	Heat and pressure
Warm-up time	From a cold start (22°C ambient temperature) to *READY TO PRINT* within 70 seconds.
Power supply	100/120VAC (90~140VAC) 50/60Hz (47Hz ~63Hz) 220/240VAC (198~264VAC) 50/60Hz (47Hz ~63Hz)
Power consumption	**100/120VAC printer:** Maximum consumption: 800W Running, 45 W Sleep, Maximum current: 8A (100VAC)/6.66A (120VAC). **240VAC printer:** Maximum consumption: 800W Running, 45W Sleep. Maximum current: 3.33A (240VAC). Note: No electrical current is supplied to the Fuser Assy in Sleep Mode.
Size and weight (not including the CRU, PWB ESS or any options)	Width 422mm X Depth 439mm X Height 413mm
Space requirements	Front: Minimum 240mm Back: Minimum 300mm Sides: Minimum 200mm
Maximum paper size	Legal 14" (8.5"X14" = 355.6mmX215.9mm)
Maximum printable area	Entire page except a 4mm border on all four sides
Maximum paper load	550 sheets of RX 80 A4 (3R91805) paper, or Xerox 4200lb Letter size paper.
Operating environment with CRU	5 ~ 35°C @ 15% to 85% RH (operating) 0 ~ 3,100 meter above sea level Horizontal bias within 5° of level

Category	Specification
Storage environment with a packed CRU	Normal condition:12 months maximum at 0~35°C @ 15~80%RH with no condensation present Severe condition: 1 month maximum at 20~0°C or 35~40°C @ 5~15 or 80~95%RH with no condensation present
Storage environment without a packed CRU	Normal condition: 12 months maximum at -20~50°C @ 5~85%RH with no condensation present Severe condition: 48 hours maximum at 50~60°C @ 85~95%RH with no condensation present
Acoustic Noise (submitted to ISO 7779)	Standby mode: *TBD* dB(A) Sleep mode: Background noise only Printing mode: 52.0dB(A) or *TBD* dB(A) with options[1] [1]: Configuration is that Base Engine + Duplex Assy + Tray 2 + Tray3+ ENV.Feeder+ OCT .
Dust generated	No more than 0.075mg/m^3 of dust
CRU life	10,000 prints on A4 paper, with 5% print coverage
Toner Sensor (Factory Option)	After Toner Sensor detects a low level of toner in the CRU, the printer makes ten additional prints before generating an J5 error message. The MCU notifies the Controller by setting bit 2 of Status 15 (Zero Warning bit) to 1.

Safety Standards

HAKUBA satisfies the following safety standards:

Category	Standard Satisfied
Laser Safety	100V/120V type is submitted to FDA 21 CFR (Chapter 1, Subchapter J, Section 1010/1040). 220V/240V type is submitted to IEC 825 Class 1 laser Product.
Ozone Density	Does not exceed 0.01ppm of ozone density TWA (Time Weight Average), measured accordance with the BAM standerd.
Other standards	100V/120V type satisfies;- UL 1950 3rd Edition, CSA C22.2 no. 950-M95 or equivalent, NOM 200V/220V satisfies;- IEC 950 including amendments 1,2,3 and 4, CE Directive [1], Nordic and other Agency Approval [2], CCIB Note: 1. When the controller is installed, the OEM customer shall be responsible for the submittal of CE and CCIB. 2.Tthe OEM customer shall be responsible for the Nordic agency approvals including NEMKO, SEMKO, SETI and DEMKO.

EMI

100VAC printer:	VCCI information Processing Equipment
120VAC printer:	FCC part 15 Subpart B, Class B (ANSI C63.4/11.4D)
200/220VAC printer:	EN55022 (CISPR Publication 22), Class B

First Print Output Time (FPOT)

The First Print Output Time is the time from when the printer receives a START signal in the READY state, until a single page is printed and delivered into the output tray, under the scanning condition (ROS Motor ON).

Paper Size	Simplex Mode t (sec)	Duplex Mode t (sec)
Letter SEF	7.5	13.8 14.6
A4 SEF	7.6	14.0 15.4

Duplex Upper Value:1 sht.Batch Mode

Duplex Lower Value:2 sht.Batch Mode

Note:

1.The data are the theoretical values when the paper is fed from tray 1.

2. When ROS Motor OFF, the values are adjusted as follows:

FPOT= t + 4.0 (600 dpi)

FPOT = t+ 4.0 (1200 dpi)

3. When the paper is fed from other tray, the values are adjusted as follows:

FPOT = t - 1.2 (from MBF)

FPOT = t + 1.2 (from tray 2)

FPOT = t + 2.4 (from tray 3)

4. The values for FPOT from the Sleep Mode are to be added 65 to each value.

Continuous Printing Speed After The First Sheet Out

Paper Type	Simplex Mode (prints per minute)	Duplex Mode (impressions per minute)
Letter SEF	26.2	19.2
Legal 13” SEF	21.5	16.3
Legal 14” SEF	21.5	15.9
Executive SEF	TBD	14
A4 SEF	24.9	18.1
B5 (JIS) SEF	26.2	19.8

Paper Specifications

The printer uses the following five paper feed methods:

550 Universal Cassette

Standard feeder for the HAKUBA printer. Holds up to 550 sheets of the following papers.

Type	Size (mm x mm)
Letter SEF	215.9 x 279.4
Legal 13”	215.9 x 330.2
Legal 14”	215.9 x 355.6
Executive SEF	184.2 x 266.7
A4 SEF	210.0 x 297.0
B5 (JIS) SEF	182.0 x 257.0
A5 SEF	149.0 x 210.0
Custom Width: Length:	 98.4 ~ 215.9 148.0 ~ 355.6

Note: Automatic size sensing is not effective for the custom size paper.

Available paper weight for Simplex Mode is 60gsm (16lb) ~ 216gsm (80lb) and for Duplex Mode 60gsm (16lb) ~ 105gsm (28lb).

Multi-Bypass Feeder (MBF)

Standard feeder for the HAKUBA printer. The tables shows available paper sizes and stack capacity.

Width (mm)	Length (mm)
76.2 ~ 215.9	127.0 ~ 355.6

Note: Available weight of paper as follows:

Qualified paper: 60gsm (16lb) ~ 216gsm (80lb)

Japanese Official Postcard: 190gsm

Card Stock: 216gsm (80lb)

Type	Paper Stack Capacity
Fuji Xerox P A4	120 sheets
Xerox 4200DP 20lb Letter, RX 80 A4	100 sheets
Standard Paper	11.5mm (stacking hight)
Transparency, Label, Postcard	30 sheets
Envelope	10 sheets
Label sheet	30 sheets

Envelope Feeder (Optional)

Optional feeder for the HAKUBA printer, which enable to feed envelop. The table shows available paper sizes and stack capacity.

Paper Size	Stackable Capacity
Com #10 SEF	75 envelopes (Columbian brand)
Monarch SEF	75 envelopes (Columbian brand)
DL SEF	75 envelopes (Columbian brand)
C5 SEF	50 envelops (Columbian brand)
Japanese Official postcard	100 sheets
Postcard	100 sheets

Note : Supported paper weight is 60gsm (16lb) ~ 105gsm (28lb) and 190gsm (Japanese Official Postcard.

Duplex Assy (Optional)

Optional feeder for the HAKUBA printer, which enable to print on both sides of paper. The table shows available paper sizes.

Type	Size (mm x mm)
Letter SEF	215.9 x 279.4
Legal 13”	215.9 x 330.2
Legal 14”	215.9 x 355.6
Executive SEF	184.2 x 266.7
A4 SEF	210.0 x 297.0
B5 (JIS) SEF	182.0 x 257.0
Custom Width: Length:	 182.0 ~ 215.9 257.0 ~ 355.6

Note: Supported paper weight is 60gsm (16lb) ~ 105gsm (28lb).

Custom size paper longer than JIS B5 is available only when this size is designed into the ESS Controller, and only when printed in one sheet batch mode.

Baseline Paper

Printer Model	Standard Paper
Japan Domestic	FX P A4
International	Xerox 4200 DP 20lb Letter RX80 A4 (3R91805)

Special Purpose Paper supported for Cassette and MBF

Type	Size	Media recommended
Transparency	216 x 279mm (Letter) 216 x 279mm (Letter) 210 x 297mm (A4) [1] 210 x 297mm (A4)	Xerox P/N 3R2780 (US) 3M P/N CG3300 Xerox 3R91334 (Europe) Xerox P/N JE001 (Japan)
Label	216 x 279mm (Letter) 216 x 279mm (Letter) 210 x 297mm (A4) 210 x 297mm (A4)	Xerox 3R4469 (US) Avery Laser Labels P/N 5160 Xerox P/N 3R97408 (Europe) Xerox P/N V860 (Japan)
Envelope [2]	104.8 x 241.3mm 98.4 x 190.5mm 162 x 229mm 110 x 220mm	Columbiam Brand Com #10 Monroe Brand Monarch C5 (River series #02067/Gummed) DL (River series #01029/Gummed)
Postcard	105 x 148.5mm 100 x 148mm [3]	Postcard Japanese Official Post Card
Cardstock	76.2 x 127mm ~ 210 x 297mm (A4) or 215.9 x 279.4mm (Letter)	3" ~ 5"Oxford Index Card (40801) Cover Quest Letter

Note: 1. For Pasted-Black (Paper-backed) type, pasting margin shall be in the lead edge (SEF side).

2. Monroe Brand Monarch, Columbian Brand Com #10 or equivalents

3. Japanese Official Postcard (190gsm) or equivalents, excluding multicolored printing media.

Representative Baseline / Standard Paper

Weight	Type	Legal 14" 215.9 x 355.6mm	Legal 13" 215.9 x 330.2mm	A4 210.0 x 297.0mm	Letter 215.9 x 279.4mm	Execu-tive 184.2 x 266.7mm	B5(JIS) 182.0 x 257.0mm	B5(ISO) 176.0 x 250.0mm	A5 149.0 x 210.0mm	Half Letter 139.7 x 215.9mm
75gsm 20lb	Xerox 4000				CST MBF Dup					
75gsm 20lb	Xerox 4024 DP	CST MBF Dup	CST MBF Dup							CST(M) MBF
105gsm 28lb	Xerox 4024DP	CST MBF Dup	CST MBF Dup		CST MBF Dup					
75gsm 20lb	White Nekoosa					CST MBF Dup				
90gsm 24lb	White Nekoosa	CST MBF Dup	CST MBF Dup		CST MBF Dup	CST MBF Dup				
64gsm	FX EP			CST MBF Dup			CST MBF Dup			
65gsm	FX P			CST MBF Dup			CST MBF Dup			
80gsm	RX80			CST MBF Dup 3R91805					CST MBF 3R1832	
90gsm	Fuji Xerox L			CST MBF Dup 3R91854						

Note: CST (for Cassette Assy, automatic sensing), CST(M) (for Cassette Assy, manual sensing), MBF (for Multi Bypass Feeder), Dup (for Duplex Assy)

Paper Size and Feeder Tray / Output Tray Compatibility

Paper sizes shown in the following table can be identified to the controller for improve processing. Otherwise, it will be processed as the maximum custom size.

Type	Name	Size Short Edge x Long Edge	CST (STD/ OPT)	MBF	DUP (Option)	FCD (Option)	OCT (Option)
Regular Cut Sheet	Legal 14”	215.9 x 355.6	OK	OK	OK		
	Legal 13”	215.9 x 330.2	OK	OK	OK		
	A4	210.0 x 297.0	OK	OK	OK	OK	OK
	1/3 A4	99.0 x 210.0	OK	OK			
	Letter	215.9 x 279.4	OK	OK	OK	OK	OK
	Executive	184.2 x 266.7	OK	OK	OK		
	B5(JIS)	182.0 x 257.0	OK	OK	OK		
	B5(ISO)	176.0 x 250.0		OK			
	A5	149.0 x 210.0	OK	OK			
	Statement (Half Letter)	139.7 x 215.9		OK			
Enve-lope	C5	162.0 x 229.0		OK		OK	
	COM-10	104.8 x 241.3		OK		OK	
	DL	110.0 x 220.0		OK		OK	
	Monarch	98.4 x 190.5		OK		OK	
Post Card	Japanese Official	100 x 148.0		OK		OK	
	Universal size	105.0 x 148.5		OK		OK	
Others	Cardstock	76.2 x 127.0 ~ 210 x 297(A4) or 215.9 x 279.4 (Letter)	OK	OK			
	Universal	76.2 ~ 215.9 x 127 ~ 355.6	OK	OK			
	Custom	98.4 ~ 215.9 x 148.0 ~ 355.6	OK	OK			OK
	Custom	182.0 ~ 215.9 x 257.0 ~ 355.6	OK	OK	OK		
Transpar-ency Sheet	Letter	215.9 x 279.4	OK	OK		OK	
	A4	210.0 x 297.0	OK	OK		OK	
Label Media Sheet	Letter	215.9 x 279.4	OK	OK		OK	
	A4	210.0 x 297.0	OK	OK		OK	

Printing Accuracy

- **Lead Edge Registration:** ±2.0mm maximum
- **Side Edge Registration:** ±2.5mm maximum
- **Skew:** ±1.2mm maximum (at the distance of 190mm)
- **Vertical Accuracy (Verticality):** ±0.8mm (at the distance of 114.5mm)
- **Linear Accuracy in the Direction of Feed:** ±0.5mm (at 234mm)
- **Linear Accuracy in the Direction of Feed:** ±0.5mm (at 194mm)
- **Linear Accuracy at the 45° Angle to the Direction of Feed:** ±1.2mm (at 269mm)
- **Horizontal Accuracy (Parallelism):** ±1.2mm (at 234mm)
- **Magnification Accuracy in the Direction of Feed:** 100±0.8% (at the distance of 234mm)
- **Magnification Accuracy in the Direction of Feed:** 100±0.8% (at the distance of 190mm)

CRU (Customer Replaceable Units)

CRU	10,000 prints before replacement
Fuser Assy (includes replacement BTR)	200,000 prints before replacement

Note: Evaluated based on the impression on the A4 paper with 5% coverage in Simplex printing. The Duplex printing is evaluated as two Simplex printing.

Options

There are numerous customer installed options available for the HAKUBA printer. The only non-customer installed option (installed only at the factory) is the Toner Sensor.

For detailed technical and service information on options, refer to the individual service manuals.

Option	Description
550 Sheet Paper Feeder	Provides 550 sheet continuous feed when used in conjunction with the 550 sheet Paper Cassette. You can install one or two 550 Sheet Paper Feeders.
550 Sheet Paper Cassette	Used with the 550 Sheet Paper Feeder. The cassette holds 550 sheets of paper.
Cover Assy Rear Face Up	The tray can hold 120 sheets of paper or 13mm stack hight, facing up side 1 of the printed paper.
Duplex Assy	Provides duplex (two sided) printing capability.
Offset Catch Tray (OCT)	Offsets each set of printouts by 1.1 inches (2.8cm). The tray holds up to 500 sheets of paper, in four different paper sizes. You cannot install the Offset Catch Tray if you already have the Mail Box option installed.
Envelope Feeder	Provides continuous envelope feed.

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